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A LONGITUDINAL INVESTIGATION OF THE EFFECTS OF TRAINING
AND EXPERIENCE ON BEGINNING TEACHERS' PERCEPTIONS
OF CRITICAL TEACHING BEHAVIOUR

by

M. PATRICIA BROWNE

A THESIS

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FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "A Longitudinal Investigation of the Effects of Training and Experience on Beginning Teachers' Perceptions of Critical Teaching Behaviour" submitted by M. Patricia Browne in partial fulfillment of the requirements for the degree of Master of Education.

Date October 4, . 1965.

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY

REPORT OF THE COMMITTEE ON THE
PROGRESS OF THE DEPARTMENT OF CHEMISTRY
DURING THE YEAR 1900-1901
BY THE COMMITTEE ON THE PROGRESS OF THE DEPARTMENT OF CHEMISTRY
CHICAGO, ILL., 1901



THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY

ABSTRACT

This study sought to determine the effects of training and experience on beginning teachers' perceptions of good and poor teaching behaviour. In addition, the study investigated the nature of the change in perception; the relationship between the changes in perception and sex, grade level taught, teacher training average, and grade XII matriculation average; and the relationship between the changes in perception and four ratings of the teachers' effectiveness at two different stages of professional development.

The sample included 119 subjects who had completed the one year teacher training program in the Faculty of Education at the University of Alberta in 1958-59 and who subsequently taught for one year in Alberta schools in grades I to IX.

To secure the desired information about the subjects' perceptions of teaching behaviour, a modified form of the Critical Incident Technique was employed. Subjects were requested to describe a teaching situation which they considered representative of good teaching behaviour and a teaching situation which they considered representative of poor teaching behaviour. The descriptions were collected at three stages in the professional development of the beginning teacher: prior to entering the one year teacher training program, upon completion of the program, and after one year of teaching experience. Information regarding sex, grade level taught, teacher training average and grade

XII matriculation average was obtained from official university records and by means of a questionnaire. The four ratings of teaching effectiveness, which included the student teaching grade, university observers' evaluations made during the first year of teaching, a school superintendents evaluation, and a self-evaluation, were derived from scales constructed for this purpose.

The perceptions of teaching behaviour elicited by the CIT were dichotomously classified as pupil-centered or method-centered and subsequently compared at each of the three stages of professional development. Groups were identified according to the patterns of change in perception over the three stages and compared in terms of the selected personal and situational variables and ratings of teaching effectiveness. The statistical analysis of the comparisons involved the application of two nonparametric tests for independence: chi square and the Fisher Exact Probability Test.

The results indicated that training and experience did affect the beginning teachers' perceptions of good and poor teaching behaviour, when perceptions of teaching behaviour were dichotomously classified as method-centered and pupil-centered. Furthermore, the effects of the training and experience were uni-directional in that perceptions of teaching behaviour became increasingly method-centered over the three phases of the test sequence. The comparison of the patterns of change in perception in relation to the personal and situational

variables suggested that sex and grade level were related to the perceptions of teaching behaviour, as were ratings of effectiveness. The data of the study did not provide any strong evidence, however, regarding the nature of the relationship. An important, but not unanticipated, subsidiary finding of the study was the lack of agreement between the university observers' ratings of teaching effectiveness and those of the superintendents, as well as between the superintendent's rating and the teachers' self-evaluation.

At the conclusion, several implications arising from the findings were presented which may be of particular interest and importance to those involved with teacher education and concerned with problems of teacher selection and effectiveness. In addition, several questions worthy of further investigation which arose directly from the conduct of this study were indicated for those considering research in this area.

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CHAPTER I

THE PROBLEM

I. INTRODUCTION

Controversy among educators, academicians and laymen about the education of teachers has led to many bitter arguments. At present, however, traditional arguments concerned with the "born" versus the "made" teacher appear to have subsided and there seems to be a movement towards general agreement that a need exists for the further development of programs specifically designed for the preparation of teachers. However, the exact nature of these programs and how they are to operate continues to represent a crucial educational issue. A review of the literature suggests that proponents and opponents of different programs appear to have merely armed themselves, one against the other, with little or no regard for empirical evidence to support their positions. Although considerable attention has been given to the discussion of the various approaches to teacher education, there have been few experimental studies in this area. Stinnet and Clarke (1960) in their survey of teacher education programs in the Encyclopedia of Educational Research, for example, make reference to only one such study at the elementary school level.

Smith (1963) clearly pointed out the lack of empirical evidence in his appraisal of educational research and the preparation of teachers when he concluded that:

A systematic and ingenuous study of the published writings, relating to teacher education shows that we simply have far too little definite factual information upon which to base decisions. (p. 57)

Furthermore, Smith asserted that although he had little doubt that the assumptions upon which present programs for the education and training of teachers are based may be well intentioned and planned in a logical manner, there was simply too little proof of their general validity.

Woodring (1964) encountered this same phenomenon when he examined educators' convictions about the relative merits of concentrated teacher training programs following liberal arts programs, as opposed to undergraduate programs in education. He concluded that despite the arguments, research "has provided no convincing evidence for either side of the dispute." (p. 302)

Eric Allen (1963) reviewing research relative to the professional education of British teachers has suggested that there is a critical need for examination of the training process itself, in order to determine just what the expectations for it are, and what it actually achieves. Of particular relevance for the present study is his suggestion that:

Experiment, however, means not only that new ventures in training are made, but that the processes and results involved are the subject of careful evaluation. (p. 200)

That not all educators recognize or accept the need for experimental research into the nature and subsequent effects of teacher education programs is apparent from the fact that James B. Conant (1963)

in The Education of American Teachers, makes no major recommendations for research. Some educators have attempted to circumvent the lack of research evidence by subscribing to the view that certain undeniable axioms underlie teacher education. For example, the National Education Association (1963) in a paper dealing with teacher preparation has stated axiomatically that teacher education is "so organized and conducted that it strongly affects the attitudes and behaviour of the college student." (p. 10)

It was the general state of confusion in the field arising, at least in part, from the paucity of research about the efficacy of teacher education programs that prompted this investigation.

II. STATEMENT OF THE PROBLEM

The major problem investigated in this study was to determine whether or not teacher education and teaching experience resulted in changes in the beginning teacher's perception of good and poor teaching behaviour. More specifically, teacher candidates' perceptions of teaching behaviour were dichotomously classified as pupil-centered or method-centered prior to entrance into a one year teacher training program and subsequently examined again at the end of the teacher training program and at the end of the first year of teaching experience in order to determine whether or not a comparative analysis would reveal changes in perception.

Sub-problems

The following sub-problems were also investigated in the study.

1. When perceptions of teaching behaviour are dichotomously classified as pupil-centered or method-centered does the beginning teacher tend to become more pupil-centered or more method-centered as a result of participation in the training program and one year of teaching experience?

2. What is the relationship between the patterns of change in perception over three stages of professional development and selected personal and situational characteristics of beginning teachers?

3. What is the relationship between the patterns of change in perception over three stages of professional development and selected ratings of teaching effectiveness?

III. IMPORTANCE OF THE STUDY

Previous studies concerned with the effects of teacher education and/or experience on the attitudes and perceptions of beginning teachers have been few considering the relevance of the problem. Where investigators have been concerned with this problem, research designs emphasizing cross-sectional techniques have seriously limited the applicability of the findings. Even investigators who have employed cross-sectional techniques have recommended that examination of changes in attitudes and perceptions associated with professional training and

experience should be longitudinal. This study which follows a group of beginning teachers through their training program and out into the field represents one such longitudinal study.

The findings of this study might prove useful to those who are involved with the preparation of teachers. First, the results could indicate whether or not teacher training, at least as represented by the one year teacher training program examined in this study, does affect the beginning teachers' perceptions of the teaching task. Axioms, notwithstanding, there is little evidence to support the supposition that changes do occur. More importantly, by comparing perceptions of teaching behaviour developed during the training program with those held following teaching experience, it is possible to determine whether or not the perceptions developed through training are realistically related to actual classroom practice. That is, if changes in perception initiated during the program remain constant during the year of experience, this would suggest that the program is realistic, whereas, if perceptions change during the teaching year this would suggest that the program aims should be carefully evaluated. In terms of improving teacher training programs, Richards (1960) has pointed out that a better insight into the characteristic attitudes of prospective teachers cannot help but give direction to the work being done by the training staff, and that "furthermore, there has been little evaluation of how much, or in what directions, attitudes change throughout the teacher education process." (p. 375)

IV. DELIMITATIONS OF THE STUDY

1. The sample for this study was drawn from the population of teacher candidates who entered the 1958-59 one year teacher training program at the University of Alberta and subsequently completed one year of teaching experience in Alberta schools. The sample, therefore, is representative of one particular group of teachers - those who have completed this specific one year teacher training program, and subsequently taught in Alberta schools for one year.
2. The program investigated in this study was the one year teacher training program for students who had completed specified matriculation requirements. As such, it represents but one of a number of different teacher education programs currently in operation in Canada and elsewhere.
3. The teaching certificate granted by the Alberta Department of Education to those who successfully completed the one year teacher training program was valid for Grades I to IX. Therefore, the teaching experience being examined is limited to elementary and junior high schools.
4. The perceptions of teaching behaviour have been dichotomously identified as pupil-centered and method-centered. As such, they are considered to represent the two extremes of a multi-dimensional continuum of educational attitudes and perceptions of teaching behaviour. The more limiting dimensions have not been examined in the study.

V. LIMITATIONS OF THE STUDY

The following limitations should be observed with respect to the design of this study and the applicability of the findings.

1. The selection of the sample of students for this investigation was drawn solely from the group of students who participated in the one year teacher training program offered at the University of Alberta in the 1958-59 academic year and who subsequently completed one year of classroom teaching in the 1959-60 school year. There was no attempt to control such variables as age, sex, prior experience, or social background, which might be considered characteristic of individuals entering the program, but who failed to complete it or did not teach in 1959-60.

2. It was accepted that the major limitation of the present study rests in the subjectivity of the classification scheme applied to the individual descriptions of good and poor teaching behaviour. The classification of the descriptions as representative of pupil-centered perceptions or method-centered perceptions was not predetermined but grew out of the analysis of the data. The use of the Critical Incident Technique in this study departs significantly from the manner in which it has been used by other investigators, in that reports of previous research have given no indication that the technique has been used as a measure of an individual's perceptions of teaching behaviour. Because of this original use of the testing instrument, it was considered

profitable to forego an established set of evaluative criteria for determining the specific teaching behaviour referred to in the descriptions. The classification of the individual descriptions was, therefore, arrived at inductively, although the literature and previous research in educational attitudes did give some direction to this operation.

VI. DEFINITION OF TERMS

A number of terms having specific meaning and used frequently in this investigation follow:

1. Teacher training. This term applies specifically to the one year teacher preparation program being investigated. The term "teacher training" has been used rather than "teacher education" in order to differentiate between this program which concentrated on professional courses in methods, educational psychology and educational administration, as opposed to those programs which include both professional and academic courses.

2. Teacher candidate. The subjects are referred to as teacher candidates when reference is made to them prior to training and experience.

3. Student teacher. The subjects are referred to as student teachers when reference is made to them during the teacher training program.

4. Beginning teacher. This term applies when subjects are referred to during or upon completion of the first year of teaching.
5. Perception. The term perception involves its broader meaning implied in social perception or the formation of impressions concerning other people and their behaviour.
6. Pupil-centered perceptions. Perceptions were classified as pupil-centered if the situation described by the subjects involved (1) a direct pupil-teacher relationship, (2) special reference to the teacher's concern for the individual differences found among her students, or (3) disciplinary action on the part of the teacher.
7. Method-centered perceptions. Perceptions were classified as method-centered if the situation described by the subjects involved (1) the specific steps taken by the teacher to introduce and clarify specific concepts or skills, (2) general reference to methods and materials including the use of visual aids, or (3) overall reference to subject matter and the teacher's knowledge of the subject matter.
8. Role. A role refers to those patterned sequences of learned actions or deeds performed by a person in an interaction situation. (Sarbin, 1954; p. 226).
9. Role expectations. These are the normative rights and duties associated with a status or position. (Getzels and Guba, 1957)

VII. ASSUMPTIONS

The hypotheses tested in this investigation were based upon a number of assumptions. These assumptions were as follows:

1. It was assumed that specific experiences can effect changes in perception. This assumption is clarified by the social perception and role expectation theory examined during the study.
2. It was assumed that perceptions and expectations are important in that they influence the individual's behaviour in the teaching situation. Social perception and role theory are discussed and related to teacher behaviour in Chapter II of this report.
3. It was assumed that perceptions and expectations are characteristics of the individual and that there would be a relationship between perceptions and expectations and other personal and situational characteristics.
4. It was assumed that perceptions of teaching behaviour, as these are involved in role expectations, will be related to the teacher's effectiveness in the classroom.
5. It was assumed that the teaching situations described as representative of good and poor teaching behaviour, having been specifically chosen from the multitude of teaching situations subjects had witnessed, would reflect the subject's perception of the critical requirements of teaching behaviour.
6. It was assumed that individuals would respond differently

to their training and classroom experiences, and that therefore, there would be differences in what was perceived as critical teaching behaviour at the various stages of professional development.

VIII. HYPOTHESES TO BE TESTED IN THE STUDY

For the purpose of this investigation the following research hypotheses were examined and tested:

Hypothesis I

That there will be a significant difference in the group's perception of good and poor teaching behaviour classified as method-centered or pupil-centered

- a. when perceptions of good and poor teaching behaviour held prior to a one year teacher training program are compared with perceptions of good and poor teaching behaviour held at the end of the one year teacher training program;
- b. when perceptions of good and poor teaching behaviour held at the end of one year of teacher training are compared with perceptions of good and poor teaching behaviour held at the end of the first year of classroom experience;
- c. when perceptions of good and poor teaching behaviour held prior to one year of teacher training are compared with perceptions held at the end of one year of classroom experience.

Hypothesis II

That the change in perception will be in the direction of method-centered perceptions of teaching behaviour rather than pupil-centered perceptions of teaching behaviour.

Hypothesis III.

That there will be significant differences among groups identified by their patterns of perceptual change through three stages of their professional development when these groups are compared in terms of selected personal and situational characteristics, including: sex, grade taught, teacher training average, and grade twelve matriculation average.

Hypothesis IV

That there will be significant differences among groups identified by their patterns of perceptual change through three stages of their professional development when these groups are compared in terms of selected ratings of their effectiveness in the classroom, including: the student teaching rating, ratings by superintendents and university observers in the teachers' own classrooms and self evaluations following one year of teaching experience.

IX. OVERVIEW OF THE THESIS

The report of this study of changes in beginning teachers' perceptions of good and poor teaching behaviour will consist of five chapters. This chapter has been concerned with an introduction to the problem under study. It included the statement of the problem and sub-problems, the importance of the research, the delimitations and limitations of the study, a definition of terms, the assumptions basic to the study, and the research hypotheses to be examined.

Chapter II will deal with the theoretical framework based on social perception and role expectation theory, and a review of related studies of attitude changes resulting from training and/or experience.

Chapter III will include a description of the research design; the instrument, the sample, the teacher education program, the collection and classification of the data, and the procedures involved in the statistical analysis of the data.

Chapter IV will consist of an analysis and interpretation of the data in five sections. Section one will examine the hypothesis related to changes in perception resulting from training and experience. Section two will analyze the change in order to determine the direction of the change. Sections three and four will examine the relationship between the patterns of change in perception over the three stages of professional development and selected personal and situational characteristics and ratings of teaching effectiveness respectively. The fifth section will summarize the relevant findings.

The final chapter of the thesis summarizes the findings and reports the conclusions that the study will support. Some implications and some suggestions for further research are also included.

CHAPTER II

REVIEW OF RELATED LITERATURE

In this chapter, the theoretical framework and related research basic to the investigation will be discussed. The theoretical framework is derived principally from two areas of socio-psychological theory: social perception and role expectations. As this paper is specifically concerned with changes in the beginning teacher's perception of good and poor teaching behaviour related to training and experience, the review of educational research is limited to studies of attitude change resulting from teacher education and/or experience. This limitation is based on the assumption that attitudes are involved in perceptions and expectations -- a conclusion that appears to be justified by the fact that studies of the effects of teacher training and/or experience on perceptions and expectations have been carried out primarily as attitude studies.

I. THEORETICAL FRAMEWORK

This section will deal first with a discussion of social perception and role expectations separately, before summarizing their common elements and interrelationships as they relate to the problems of this investigation.

Social Perception Theory

There has been a tendency in recent studies of teacher

effectiveness to turn from the problem of determining the specific teacher attributes associated with effective and ineffective teacher performance to an examination of the perceptual framework of the teacher evaluator (Anderson and Hunka, 1963). That is, increasingly, it is being recognized that evaluation involves subjective judgements and inferences which go beyond the stimulus of the teaching situation being observed.

The lack of congruence among evaluators has been pointed up in a number of studies. Ryans (1960), for example, found that there were many differences in his evaluators' reports of the same teacher, even when the teacher was observed simultaneously by the raters. Worth (1961) found many differences in the evaluations of superintendents when they were asked to rate the performance of a teacher, after observing a film of the teacher at work in her classroom.

Kerlinger (1958, 1963) examined the educational attitudes of different groups of individuals, including education professors, liberal arts professors, and laymen. He found a lack of congruence, not among individuals as such, but among the groups. As a result of his study, he further concluded that there was "a remarkable congruence between the attitudinal and perceptual factor structures of some forty judges" (1958, p. 90) and that he could predict quite accurately from attitude to perceptual judgement about educational matters.

Bruner (1951) developed a theory of social perception which applies to the problems of teacher evaluation. He proposed that

perception involves not only the stimulus of the environment but the perceiver's internalized emotions, values, and attitudes as well. According to Bruner's theory, perception involves the individual's pattern of cognitive behaviour, in that perceiving begins with an expectancy or hypothesis, the result of which is that:

We not only see but look for, not only hear but listen to. In short, perceiving takes place in a "tuned organism"! (1951, pp. 123-24)

The individual's unique pattern of cognitive behaviour is the product of his past experience and training. Selectivity in perception is induced, in part at least, by the enormity of the environment. That is, the individual is able to attend to only a limited number of cues in the environment, because the cognitive strain of perceiving simultaneously every stimulus would represent too great a task for him. The environmental cues that will attract him are those which he perceives as relevant in terms of his past experience and training. The result is that even when two observers are faced with the same situation, they will attend to different cues and will, therefore, tend to perceive the situation differently. Bruner (1957) considered the problems of identifying the "good" teacher within the framework of his theory and concluded that the concept of the good teacher involves a value judgement. Therefore because different individuals hold different systems of values, concepts of the "good" teacher are bound to differ.

Role Expectations

The teacher training period can be conceived of as a time for role learning: the time when the beginning teacher is introduced to a set of expectations for the teacher's role. Getzels and Guba (1957) have developed a theory of educational administration which helps to explain the effects of role expectations on the behaviour of the role incumbent. They propose that social systems are established by society to carry out specialized functions for goal attainment and that these social systems consist of two dimensions: the nomothetic dimension and the idiographic dimension. The nomothetic dimension is sociological in nature and is comprised of institutions with numerous roles and expectations designed to fulfill the goals of the system. The idiographic dimension is psychological in nature and is made up of individuals with their unique personalities and need-dispositions. The diagram in Figure 1 shows a graphic representation of the model.

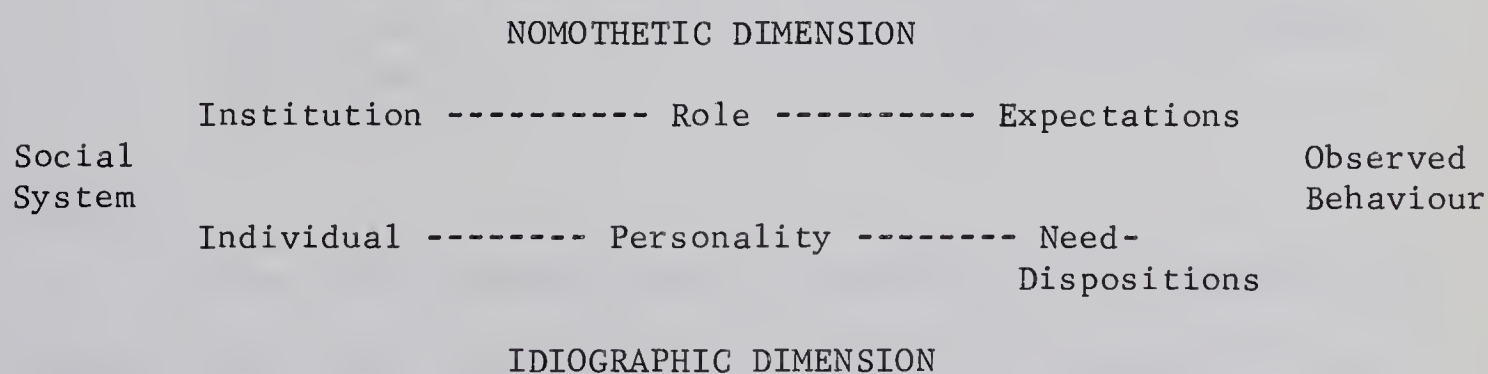


FIGURE 1

THE GETZELS-GUBA MODEL SHOWING THE NOMOTHETIC AND
IDIOGRAPHIC DIMENSIONS OF SOCIAL BEHAVIOUR

An individual's behaviour within a social system, such as the teacher in the classroom, may be conceived as a function of his personality (defined by need-dispositions) and his role (defined by those expectations for the status occupied). Thus, Getzels and Guba propose that:

...a given act is conceived as deriving simultaneously from both the nomothetic and the idiographic dimensions. That is to say, social behaviour results as the individual attempts to cope with an environment composed of patterns of expectations for his behaviour in ways consistent with his own independent pattern of needs.
(p. 429)

Role expectations also act as reference points for the evaluation of the behaviour of the role incumbent. Getzels and Guba have considered the problems of teacher effectiveness within the framework of their theory and maintain that it is not the behaviour of the person who is the subject of the rating which is the crucial variable, but:

...the behaviour relative to some expectations held by the rater for the behaviour...In the terms of our model, effectiveness is a function of the congruence of behaviour with expectations, and it must be assessed as such.
(pp. 433-434)

Summary

It has been suggested that the perception of the behaviour of another is not solely dependent upon the behaviour observed but also upon the individual observer's cognitive patterns which provide a readiness to perceive certain environmental cues. Role expectations held by the individual may be conceived of as one of the internalized

conditions affecting what is perceived. That is, in part at least, the individual perceives the role of another in terms of his expectations for that role.

In this study, participants were asked to describe teaching situations which were representative of good and poor teaching behaviour. The descriptions were subsequently analyzed in order to determine the elements of teacher behaviour which were deemed critical and to what extent the elements changed as a result of the structured experience provided in the teacher training program and the experiences of the classroom. If the goal of the teacher training institution is conceived, in part at least, to be that of transmitting role expectations for teachers' classroom behaviour to the beginning teacher, and if these expectations are transmitted, then, once internalized, they will become factors influencing perception. Perceptions of critical teaching behaviour would, therefore, change as a result of the training experience, depending upon the initially held perception. Furthermore, if the teacher training institution was successful in transmitting role expectations which were realistically related to classroom practice, perceptions of teaching behaviour should either remain unchanged throughout the year of teaching or change in the same direction as those transmitted by the teacher training institution.

The theory suggests that perceptions are influenced by the individual's past experience and training and that each individual's

need-dispositions will be factors involved in his observed behaviour within the social system. Assuming this to be valid, then perceptions of teaching behaviour over the three stages of professional development might be related to selected personal and situational characteristics of the individual. If the individual's need-dispositions are conceived of as influential factors in his acceptance or rejection of the expectations transmitted by the institution, then it would follow that not all individuals would exhibit the same pattern of change in perception over the three stages of professional development.

It has also been suggested that judgements of teaching effectiveness reflect the degree of congruence between the role incumbent's expectations and the expectations of the evaluator. It would follow, therefore, that groups of beginning teachers showing certain patterns of change in perception over the three stages of professional development may differ from each other in terms of ratings of their teaching effectiveness.

II. RESEARCH RELATED TO CHANGES IN ATTITUDE

This review of the related research will be limited to longitudinal studies of attitude change associated with training and/or experience, including investigations of the effects of total teacher education programs, specific parts of the total program, specific courses, student teaching, and regular classroom teaching experience.

The search of the professional literature which was initiated at the outset of the investigation served mainly to clarify that there has been very little research in this area. That is, whereas there appears to be an abundance of imaginative discussion, there is a dearth of empirical evidence to support it.

In the review that follows, studies of changes in attitude associated with the student teaching experience have been examined separately, for this area seems to have captured the attention of numerous investigators. No doubt, this attention may be attributed to an interest in student teaching, and also to the ease with which longitudinal studies of the effects of the student teaching experience can be carried out.

As a majority of the studies referred to in this review rely upon the Minnesota Teacher Attitude Inventory (MTAI) as the chief measurement device, there is a need for an explanation of the technique here. The MTAI consists of 150 positive and negative statements representing teacher attitudes. According to the MTAI Manual (Cook, Leeds, and Callis, 1951), the MTAI

...is designed to measure those attitudes of a teacher which will predict how well he will get along with pupils in interpersonal relationships, and indirectly, how well satisfied he will be with teaching as a vocation. (p. 3)

High scores on the MTAI are considered to be representative of desirable attitudes and lower scores on the MTAI are considered representative of less desirable attitudes.

Attitude Change Associated with Training and Experience

The examination of the professional literature revealed only one longitudinal investigation of the effects of training and experience using the same group of students throughout. Linden and Linden (1964) employed data based on the responses of 152 education graduates of Purdue University who had completed the Minnesota Teacher Attitude Inventory three times: (1) upon entry into teacher education, (2) during the student teaching experience, and (3) one year following graduation. The results showed that the MTAI scores obtained during the student teaching period were significantly higher than scores obtained early in teacher training and that there was a decline in scores one year following graduation. Analysis of the group's responses over the three testing periods revealed that females tended to score higher than males and that elementary and speech therapy females tended to score the highest at each phase of the test sequence. The MTAI scores of teachers and non-teachers differed one year following graduation, with the teachers' scores remaining higher. The scores from the pre-training or student teaching period did not reveal this difference and therefore offered no predictive value.

The Linden and Linden study suggests that desirable attitudes, as indicated by higher scores on the MTAI, are more pronounced after some training and at the time of the student teaching experience, but that attitudes become less desirable (as indicated by lower scores on

the MTAI) one year following graduation. The higher scores of the teachers over the non-teachers would indicate that there is some positive relationship between the effects of the training program and teaching experience on attitudes. The higher scores of elementary and speech therapy females suggest that attitudes, at least when these are measured in terms of their pupil-orientation and acceptance, are related to grade level and type of teaching experience.

Using an early version of the MTAI, Callis (1950) investigated the effects of training and experience on the attitudes of education students and beginning teachers. He compared the test-retest scores of groups of Juniors and Seniors in the College of Education at the University of Minnesota and the test-retest scores of a group of beginning teachers. The students were first tested at the beginning of the academic year and then six months later. The teachers were examined at the start of the school year and again six months later. The results of the comparisons of scores on the first test with those on the second test showed that there was a significant change in mean MTAI scores for the three groups. However, for the Juniors and the Seniors, scores were increased on the second test, whereas, for the beginning teachers, scores on the second test were decreased. The results of Callis' study indicate that although training and experience both affect attitudes, they do not appear to affect attitudes in the same direction, as attitudes which are developed during teacher education are not sustained through the first six months of teaching

experience.

Day (1959) used the MTAI to examine the attitudes of senior students at Florida State University. The students completed the MTAI prior to graduation and again one year after graduation. The results showed that the scores of those who taught were significantly lower at the end of the year of teaching, whereas, the scores of those who did not teach showed no significant change.

The MTAI was also used in a study by Rabinowitz and Rosenbaum (1960), who compared pre-graduation scores of graduates of four New York City municipal colleges with MTAI scores obtained three years later from those who had been teaching. As in Day's study, they also found that scores on the MTAI had dropped significantly during the teaching experience.

In a study to determine the effects of a course in educational psychology on the attitudes of the students, Eson (1956) administered the MTAI prior to and upon completion of a course in educational psychology. He found that the attitudes of the students, as measured by the MTAI, did tend to change in the desired direction as indicated by higher scores. However, he questioned whether the increased scores actually represented attitude change or the student's increased ability to recognize the more desirable answers. To clarify this, Eson examined his results against the findings of the test authors (Cook, et al, 1951) who had reported on the fakeability tests of the instrument.

The comparison suggested that the changes noted by Eson were similar to those of subjects who had been asked by the test authors to fake their replies in the desired direction.

Brim (1964) investigated the effects of a ten week undergraduate teacher education program upon the attitudes of students toward children and their concepts of the growth and developmental characteristics of children. Two instruments, the MTAI and the Mahoney Child Development Expectancy Index were administered at the beginning and at the end of the ten week program. Brim's findings, drawn from an analysis of differences in means and variances of the test scores, as well as personal interviews with those students who showed the most change over the quarter, supported the conclusion that the teacher education program had effected a significant change in attitude. Brim went one step further and examined the attitudes of the faculty and then examined these in terms of the changes in attitude exhibited by the students. The results showed that changes in attitude on the part of the students were in the same direction as those expressed by the faculty. These findings led to the conclusion that the faculty can and does influence the attitudes of the teacher candidate.

The studies reported here lend support to the assumption that teacher education and teaching experience influence changes in the beginning teacher's attitudes toward teaching behaviour. However, these studies suggest that there are differences in the direction of

change in attitude -- at least when direction is defined in terms of desirability as measured by the MTAI. That is, teacher education tends to result in higher scores and therefore more desirable attitudes, whereas, teaching experience tends to give rise to lower scores and, therefore, less desirable attitudes. At face value, this would suggest that the attitudes which were developed through the process of teacher education are unrealistic in terms of actual classroom experience. On the other hand, Eson's findings about the nature of his subjects' replies as they compared with those of subjects who were asked to fake desirable answers to the MTAI suggest that the expectations and attitudes of the institution may be recognized but not internalized by the students. Once the students assume their regular classroom teaching positions, scores on the MTAI may not reflect a change in attitude again, but simply that the beginning teacher no longer feels compelled to answer the test in accord with institutional expectations. This would be especially true if the institutional expectations were not the prevailing expectations in the field. Perhaps the problem represented here arises from the highly structured nature of the MTAI, the apparent ease with which it can be faked, and the manner in which the respondent perceives the expectations of the marker. In the present study, the Critical Incident Technique was used in an effort to avoid these problems, in that it was not structured and respondents were unaware that their attitudes, perceptions and expectations were

being examined. Since the desirability of their attitudes was not being considered, it was assumed that they would feel little, if any, need to fake their replies.

The research, however, does suggest that changes in attitudes are related to such factors as sex, grade level taught and type of teaching and, therefore, shows some agreement with the theory presented in the previous section. That is, that personal and situational characteristics of the individual will be related to change in his attitude.

Changes of Attitude and the Student Teaching Experience

The MTAI has also been one of the principal measuring devices used by examiners concerned with the effects of the student teaching experience on the attitudes of student teachers. Callis (1950) examined the attitudes of a group of education seniors who had completed a student teaching session during the semester in which they were examined. Callis found significant changes in attitude as measured by the MTAI, when the pre-semester scores were compared with the post-semester scores. Sandgren and Schmidt (1956) compared the MTAI scores of different types of education seniors, including those in elementary, secondary, and special education programs, prior to and following the student teaching experience. They found that the comparisons between the two MTAI scores showed a statistically significant increase, where groups were larger than ten. Furthermore, Sandgren and Schmidt

compared the final scores on the MTAI with the ratings given the students by the cooperating teachers but found no significant relationship. There was no report of the relationship between the specific changes in attitude on the part of students and ratings of their effectiveness as is examined in this study. Day (1959) also compared the MTAI scores of senior students when the MTAI was administered before and after the student teaching experience. Contrary to the findings of Sandgren and Schmidt, Day reported that the scores on the MTAI were lower following the student teaching period.

Corrigan and Griswald (1963) examined the attitude changes of student teachers toward what they called three principles of education, including (1) the learner's purpose was recognized, (2) the learner engaged in problem solving, and (3) the learner was helped to develop generalizations which were applicable to a variety of situations. In order to measure the attitude change of the student teachers towards these principles, an attitude inventory was developed and administered before and after the student teaching experience. Based upon the results of the inventory, twenty-five students who had shown varying amounts of change in attitude were interviewed in an attempt to determine the causes of change. The findings suggested that grade level taught and the educational background of the student were both related to change in attitude, as indicated by higher scores on the inventory. The analysis showed that those student teachers who had taught grades I and II made three times as great a positive change in attitude, as

indicated by higher scores on the inventory, than did those who were teaching at higher grade levels. The inventory scores also showed that those who had the highest scores prior to the student teaching experience tended to choose the lower grade levels. The implication is that attitudes appear to be related to the choice the teacher makes about teaching in the lower grades and that in terms of grades I and II, at least, these attitudes are reinforced by the teaching experience.

Changes in attitude resulting from the student teaching experience were also investigated by Lantz (1963), who used an Interpersonal Check List (ICL) and follow-up interviews. The ICL was designed primarily to determine the student teacher's self-concept of himself as a teacher and his concept of the ideal teacher. Essentially, Lantz sought to determine to what extent the student teacher's concept of the ideal elementary teacher was affected by the classroom experience - with higher ICL scores representing more desirable attitudes. The findings led to the conclusion that there were changes in the desirable direction associated with the student teaching experience, but only if the student had been placed in a non-threatening situation and given an opportunity to change.

Shumskey and Murrey (1961), using a projective technique, explored student teachers' attitudes toward discipline and the subsequent effect of the student teaching experience on these attitudes. From their findings, they concluded that the student teacher needs a more realistic conception of the problems related to children's

behaviour. They further concluded that student teachers who show a concern for the pupil as opposed to those student teachers who show a concern for technique and subject matter tend to have considerably more difficulty in recognizing and dealing with unruly behaviour in the classroom.

For the most part, the evidence concerning the effects of the student teaching experience on the attitudes of student teachers is contradictory. Hence, there is a need for more carefully controlled study of the impact of the student teaching experience upon the attitudes of prospective teachers.

CHAPTER III

THE RESEARCH DESIGN

I. DESCRIPTION OF THE INSTRUMENT

The research instrument employed in this study represents a significantly modified use of the Critical Incident Technique (CIT) developed by Flanagan (1949, 1954). In developing the CIT, Flanagan used qualified, specially trained personnel to observe industrial workers and to report specific behaviours associated with successful or unsuccessful performance. A number of observations were collected for each type of work and the results analysed in order to determine the critical requirements for positive and negative job performance. The critical behaviours were then used as the basis for constructing the relevant items for a rating scale. The technique has since been applied to a number of different occupations.

Proposals to use the original technique as an instrument for educational research have stimulated considerable controversy. In the 1956-57 issues of the Phi Delta Kappan, Burns and Corbally, for example, became involved in an intensive debate about the technique. Burns suggested that it was too subjective to be of use, except under very carefully controlled conditions. Corbally (1957), however, recommended that the technique could be used in educational research, despite the subjectivity, so long as the researcher remained objective about the subjective nature of the technique. Previously, Corbally (1956) had

proposed that the technique offered "an outstanding method of studying a task in terms of the behaviour of those involved in the task."

(p. 61) Mayhew's (1956) comments supported Corbally's arguments. Furthermore, he indicated that the technique might not only prove a valuable measure for determining the critical requirements of effective teaching behaviour, but that different groups might be asked to describe incidents of good and poor teaching that they had witnessed and that the categories "derived from this data should reveal the differing concepts of teaching effectiveness possessed by each group." (p. 596)

Controversy notwithstanding, the CIT has subsequently been used as an instrument for educational research by a number of investigators, including Hedlund (1953), Jensen (1951), Ryans (1960), and Brown (1962). The use of the technique by Ryans and Brown has particular relevance to the present study. Ryans departed from the conventional use of the technique, that of having trained observers assess ongoing job performance. Instead, as in this study, Ryan's participants were asked to recall and describe teaching situations drawn from their past experience. The descriptions were subsequently processed and reduced to twenty-five generalized teaching behaviours. Ryans then used these behaviours as the basis for the development of a criterion measure for assessing effective and ineffective teaching behaviour.

Brown (1962) had his respondents recall and describe an incident in which a principal took some action which had their approval or

disapproval. Unlike Ryans, he was not interested in determining the critical requirements of principals' behaviour but the perceptions and expectations for that behaviour, as held by parents, teachers, and trustees. Brown, then, reduced the incidents to three major categories, including (1) relating to students, (2) relating to community, and (3) relating to staff. He proposed that inherent in the situation described was the individual's perception of and expectation for the role behaviour of the principal. As in this study, it was not the accuracy of the report that was important but the fact that the particular situation had been chosen as representative of effective and ineffective behaviour.

In this study, special report forms, copies of which are included in Appendix A, were provided at three intervals (1) prior to a teacher training program, (2) following the one year teaching training program, and (3) following the first year of teaching. On each occasion, subjects were directed to describe a teaching situation, recalled from their past experience that they considered representative of good teaching and to describe a teaching situation that they considered representative of poor teaching. Samples of these two kinds of responses at each of the three stages are also included in Appendix A. Over the two year period, an attempt was made to collect three sets or six descriptions of teaching behaviour from each member of the training class. These were subsequently analyzed and the data were classified as outlined later in this chapter.

II. DESCRIPTION OF THE SAMPLE

The sample for this investigation was drawn from the one year teacher training class registered in the 1958-59 winter session at the University of Alberta. The sample included 119 of the 336 students who entered the program. The intention had been to include the whole teacher training class, however, the size of the sample was gradually reduced as the investigation proceeded. Some students left or failed to complete the program requirements; others did not teach or could not be located in Alberta schools; and still others failed to complete or return one or more of the CIT forms. Only those persons who had completed the one year training program, and one year of teaching experience, and for whom a complete set of descriptions was available were included in the sample.

In order to ascertain whether or not this procedure had resulted in a biased sample, a comparison of the sample and the teacher training class was completed with regard to a number of factors deemed influential. These factors were as follows:

1. sex
2. grade twelve matriculation average
3. teacher training average
4. grade level taught
5. university observers' ratings
6. school superintendents' ratings
7. student teaching marks
8. self-evaluations.

The hypothesis was that the sample would not differ significantly from the teacher training class when compared on the basis of

the aforementioned variables. The hypothesis was tested using chi-square for the statistical analysis. Levels of probability exceeding .05 were not considered to be statistically significant. The findings for the hypothesis, as shown in Table I, reveal that there were no significant differences between the sample and the teacher training class when they were compared in terms of: sex, grade XII average, teacher training average, grade level taught, university observers' ratings, school superintendents' ratings, student teaching marks, and the self-evaluations. On the basis of this test, it was assumed that the sample was representative of the teacher training class, and that it would be possible, within the limitations of the study, to hypothesize about the teacher training class on the basis of the findings for the sample.

III. DESCRIPTION OF THE TEACHER TRAINING PROGRAM

As the investigation was confined to a study of the effects of one particular teacher training program, the following description is necessary in order to clarify the nature of program.

The one year teacher training program offered by the Faculty of Education at the University of Alberta during the 1958-59 academic year included the following courses:

Phys. Ed. 101:	Physical Education
Phys. Ed. 105:	Health
Ed. 106:	Enterprise, Social Studies, and Community Problems

TABLE I

SUMMARY OF THE LEVELS OF SIGNIFICANT DIFFERENCE FOR THE
COMPARISON OF THE SAMPLE AND THE TEACHER TRAINING
CLASS IN TERMS OF SELECTED PERSONAL AND
SITUATIONAL VARIABLES AND RATINGS OF
TEACHER EFFECTIVENESS

Variables	Teacher Training Class							
	Personal and Situational Variables				Ratings of Teaching Effectiveness			
	Sex	XII \bar{X}	T.T. \bar{X}	Gr.	U.O.	Supt.	St. Teach.	Self
Sample	Sex	$\chi^2=.003$ NSD*						
	Grade XII \bar{X}	$\chi^2=3.505$ NSD						
	Teacher Training \bar{X}		$\chi^2=.931$ NSD					
	Grade Level Taught			$\chi^2=.082$ NSD				
Ratings	Univer- sity Observer				$\chi^2=3.634$ NSD			
	Superin- tendent					$\chi^2=1.687$ NSD		
	Student Teaching Mark						$\chi^2=.879$ NSD	
	Self- Evaluat- ion							$\chi^2=.001$ NSD

*Where the observed value of chi square did not attain the .05 or .01 level of significance, the differences observed were considered to be non-significant and designated NSD.

Ed. 121:	Reading and Language
Ed. 127:	Mathematics
Ed. 129:	Science
Ed. 138:	English
Ed. 151:	Art
Ed. 153:	Music
Ed. 161:	Educational Administration (Grades I to IX), including school law and professional ethics
Ed. 176:	Introduction to Educational Psychology
Ed. 182:	Observation and Student Teaching ¹

Descriptions and time allotments for these courses are to be found in Appendix B. The primary emphasis in the program was upon the methods involved in teaching each of the subject areas included in the elementary school curriculum. Even the content of the courses in educational administration and educational psychology were strongly oriented toward classroom practice. Subject matter deemed to be important as informational background for developing curriculum at the elementary level was also included in several of the courses, but this was of secondary concern.

IV. COLLECTION OF THE DATA

This section will outline the procedures involved in collecting the data used in the investigation. At the outset, it should be noted that the present study grew out of a larger project concerned with the problems of teacher selection. The project, termed TEASEL, for teacher selection, involved the careful evaluation of the 1958-59

¹University of Alberta, Calendar, 1958-59.

one year teacher training class at the University of Alberta. The objective of the TEASEL study was to identify the characteristics of teacher candidates and student teachers related to effective and ineffective classroom performance, in order to determine, if possible, variables which might prove useful as predictors of teaching effectiveness and, therefore, be valuable in teacher selection. Although the TEASEL report is not yet available, an interim report has been published (Anderson, 1961) which outlines the problems and procedures.

Collection of the Critical Incident Descriptions

The collection of the first two sets of critical incident descriptions was greatly facilitated by the fact that respondents were together in classes at the University of Alberta. However, the collection of the third descriptions presented some serious difficulties as the students had dispersed to various points in Alberta to assume their teaching positions. In order to locate the subjects at the end of the first year of teaching, the records of the Faculty of Education, the Alberta Teachers' Association, and the Alberta Department of Education were used extensively. Following the search of these records, a list of those who were still missing was forwarded to all school superintendents in the province in an effort to locate the rest of the original class. The subjects who were not located by these methods were assumed to have left the province or not to have taught during the 1959-60 school term,

The third set of CIT forms were distributed as part of a personal data questionnaire which may be seen in Appendix C. When respondents failed to reply to the first request to complete the questionnaire, a letter was forwarded asking them to complete and return it at the earliest opportunity. A copy of this letter is included in Appendix D. In a last effort to secure the questionnaires, a request for a reply was made by Dr. H.T. Coutts, Dean, Faculty of Education. A copy of Dr. Coutts' letter is also included in Appendix D. Although a number of teachers did complete the questionnaire, there was a tendency for some to ignore the critical incident forms, with the result that complete sets of descriptions were obtained for only 119 members of the original class of 336.

Collection of the Data About Selected Personal and Situational Characteristics

Information about four selected personal and situational characteristics of the teacher training class were collected for the investigation, including (1) sex, (2) grade level taught, (3) teacher training average, and (4) the grade XII matriculation average.

The data pertaining to sex, grade XII average and the teacher training average were taken from the students' official records maintained by the Faculty of Education, University of Alberta. The

grade or grades taught were reported in the personal data questionnaire referred to in the preceding section.

Collection of the Rating Data

For the purpose of the investigation, four ratings of teaching effectiveness were collected for each subject. The ratings included (1) the student teaching mark, (2) an evaluation by the school superintendent, (3) an evaluation by university observers who visited the teachers in their classrooms, and (4) a self-evaluation by the teacher, made near the end of the first year of teaching.

1. Student teaching mark. Each student in the teacher training program was involved in seven weeks of student teaching and observation in several different classrooms, during which time his classroom effectiveness was evaluated by the cooperating teachers and the faculty consultant assigned to the student teacher. A copy of the rating form used for the assessment is included in Appendix E. The rating was based upon five specific aspects of teacher behaviour. These were (1) personal qualities, (2) preparation for teaching, (3) presentation of lessons, (4) contact with pupils, and (5) classroom management. These were then combined into a general rating which was expressed as a letter grade and a percentage mark. Upon completion of the student teaching program, the student's ratings for the year were averaged, and then scaled and converted to a final percentage mark. The final mark was available in the student's personal record file at the University of Alberta.

2. Superintendent's rating. As part of the TEASEL project, school superintendents who had members of the training class teaching under their jurisdiction were requested to submit an evaluation of each teacher's effectiveness. A copy of the letter which was forwarded and the rating form are included in Appendix F. The school superintendents were asked to rate the teachers on a five point scale ranging from exceptional to not suited for teaching. Where the superintendents had not visited the teachers, the ratings of principals or supervisors were requested and these were accepted as the superintendent's rating.

3. University observers' rating. During the course of the TEASEL investigation, two members of the Faculty of Education observed a random sample of the members of the teacher training class in their own classrooms. Rating forms shown in Appendix G were completed by the observers and each teacher was generally evaluated as good, "middling" or poor. Where there was a marked discrepancy in the evaluations made by these two observers, a third member of the TEASEL project, who was on the Faculty of Education staff, also observed the individual teacher. Consequently, the final rating given any one teacher was a composite rating based on the reports of either two or three members of the TEASEL team.

4. Self-evaluation. Item 20 on the personal data questionnaire (see Appendix C) asked the teachers to rate their teaching proficiency on a five point scale ranging from very effective to very ineffective.

The teacher's choice on this scale was accepted as the self-evaluation.

V. TREATMENT OF THE DATA EXCLUSIVE OF THE CRITICAL INCIDENT DESCRIPTIONS

This section will deal with the preparation of the data for processing, exclusive of the critical incident descriptions. The classification of the critical incident descriptions was a difficult and most complex process and is explained in detail in the next section.

Preparing the data summary sheets.

As the information necessary to this investigation became available, data summary sheets were prepared to include relevant data for all the students in the teacher training program. Each student was identified by a code number and the personal and situational data, and ratings of effectiveness were recorded individually for each subject. By the time the complete critical incident data were available, the following information had been recorded:

- 1.. identification number
2. sex
3. grade XII matriculation average (percentage score)
4. grade level taught
5. teacher training average (percentage score)
6. student teaching mark (percentage score)
7. superintendent's rating
8. university observers' rating
- 9 self-evaluation

Once the data summary sheets had been prepared the information was punched on data processing cards in order that IBM sorting equipment could be used to facilitate the analysis.

Categorization of the Data.

Recognizing that the critical incident technique would offer only a coarse estimate of the subjects' perceptions, and that the sample was not large, the decision was made to reduce the number of categories for the various personal and situational variables and the ratings of teaching effectiveness. It was anticipated that this procedure would ameliorate some of the problems associated with the size of the cells in the contingency tables which would be prepared for the statistical analysis.

1. Student teaching mark. The student teaching marks which were recorded as percentages were first translated into stanine scores. The stanine scores were then grouped in threes so that the subjects could be identified as good (stanines 9,8,7), average (stanines 6,5,4), or poor (stanines 3,2,1) student teachers.

2. Teacher training average and the grade XII average. These averages were available as percentage scores. In order to reduce the data, the percentage scores were translated into stanine scores and grouped in threes: good (stanines 9,8,7), average (stanines 6,5,4), and poor (stanines 3,2,1).

3. Superintendent's rating. The five category rating classification of teaching effectiveness was reduced to three categories. The exceptional and proficient ratings were designated as indicating good teachers. The satisfactory rating was accepted as average. The categories relating to difficulty and not suited for teaching were accepted

as indicating poor teachers.

4. Self-evaluation. The five category rating scale was reduced to three categories: good, average, and poor. Very effective and effective were classified as good; the moderate category was classified as average; and the ineffective and very ineffective categories were classified as poor.

5. Grade levels. The grade levels were grouped and identified as follows:

1. teachers of grades I to III were identified as primary teachers
2. teachers of grades IV to VI were identified as intermediate teachers
3. teachers of grades VII and higher were identified as junior high and senior high teachers¹

Each of these new categories was identified by code number and the information was then punched on the individual data processing cards for all subjects on whom the specific information was available.

Interrelationship of the Characteristics and Rating Data.

Once the personal and situational characteristics data and the rating data had been assembled and scaled, the interrelationships among the eight variables were examined. It was anticipated that this information would help to account for some of the differences that might be observed when the data was subsequently compared in terms of the perceptions of teaching behaviour.

¹Note: only one member of the teacher training class was known to be teaching in the high school.

Contingency tables were prepared and the data analyzed for significance of difference using the chi square statistic. Levels of probability exceeding .05 were considered to be non-significant. The results of the analysis are reported in Table II. Examination of the data showed that there were no statistically significant differences among the variables except for:

1. the school superintendent's rating and the university observers' rating
2. the school superintendent's rating and the self-evaluation
3. the grade level taught and the sex of the teacher.

The difference between sex and the grade level taught may be attributed to the fact that the majority of the teachers in this study were teaching in the lower elementary school and that the few men in the sample, as might be expected, tended to be teaching at the upper grade levels.

The differences between the school superintendents' and the university observers' ratings and the school superintendents' ratings and the self evaluations could not be explained from the data of this study. However, this lack of congruence between evaluators can be explained in terms of the theoretical considerations presented in Chapter II. There it was suggested that discrepancies in evaluations of teacher competence depend not so much upon the observed behaviour of the teacher being rated, but the expectations and perceptions of the evaluators. These findings concur with the theory and raise some interesting questions about such differences and their consequences.

TABLE II

INTERRELATIONSHIPS AMONG THE SELECTED PERSONAL
AND SITUATIONAL CHARACTERISTICS AND THE
RATINGS OF TEACHING EFFECTIVENESS
EXCLUSIVE OF THE CRITICAL
INCIDENT DESCRIPTIONS

Variable		U.R.	S.R.	Self-R.	St.Teach.	TT \bar{X}	HS \bar{X}	Sex	Gr.
Uni. Rating	χ^2 Sig.	- -							
Sup't. Rating	χ^2 Sig.	15.323 .01	- -						
Self- Rating	χ^2 Sig.	1.673 NSD	6.977 .05	- -					
Student Teach- ing Gr.	χ^2 Sig.	.412 NSD	.507 NSD	2.803 NSD	- -				
Teacher Train- ing \bar{X}	χ^2 Sig.	1.579 NSD	1.410 NSD	4.610 NSD	8.640 NSD	- -			
Grade XII \bar{X}	χ^2 Sig.	2.360 NSD	2.238 NSD	.204 NSD	2.631 NSD	8.162 NSD	- -		
Sex	χ^2 Sig.	2.125 NSD	.975 NSD	.001 NSD	1.222 NSD	2.296 NSD	7.389 NSD	- -	
Grade Taught	χ^2 Sig.	5.540 NSD	7.695 NSD	.067 NSD	1.397 NSD	1.842 NSD	5.674 NSD	27.773 .01	- -

For example, can the differences between the superintendents and the university observers be attributed to the fact that their different roles have given rise to different expectations for teacher behaviour? It is conceivable that the superintendent, concerned as he is with the function of administering the system would actually attend to different aspects of a teacher's classroom behaviour than the university observers, especially since the two main observers were educational psychologists and probably more concerned with aspects of the teacher's behaviour which related to the child and the learning process than the superintendent may have been. The expectations of the beginning teacher appear to have developed in the same direction as those of the faculty - a fact which is not surprising considering that they had recently spent an academic year under the guidance of the faculty, and as Brim's (1964) study showed, the faculty do influence student attitudes. However, the implication that cannot be ignored here is that by internalizing faculty centered expectations, the beginning teacher has been placed in a very difficult situation. Whatever value judgement may be attached to the legitimacy of the expectations of either the faculty or the administrators, the beginning teacher does have to work within the school system under the jurisdiction of the superintendent. If, as a result of the training experience, these teachers have internalized a set of expectations which are at variance with those of the superintendent, or if they have

failed to internalize those expectations deemed important by the superintendent then their ability to function effectively and achieve satisfaction and success may be seriously impaired. If, these conditions, do in fact prevail, then there is obviously a need for continued effort to clarify expectations for teaching behaviour. A first step in this direction might conceivably be a closer liaison between the education faculty and school administrators.

VI. TREATMENT OF THE CRITICAL INCIDENT DESCRIPTIONS

Once all the critical incident descriptions had been collected, they were assembled for each subject. The first problem was to reduce the data to a manageable state by establishing a suitable classification system. Initially, all the data consisted of were some 1400 paragraphs, or full page, descriptions of teaching situations which had been designated by the respondents as examples of good or poor teaching. Three steps were involved in the classification of the descriptions in a form deemed appropriate for the investigation.

Step I. Identification of the Generalized Teaching Behaviours.

The first step in classifying the descriptions was to read each description of good teaching behaviour, noting in sentence or phrase form the major teaching behaviour involved in the teaching situation described. The Shute Scale for Rating Teachers,¹ a copy of which is

¹Out of print.

included in Appendix H, was used as a guide to the behaviours which might be described. After approximately 150 of the individual descriptions had been read and the behaviour recorded, it became apparent that essentially the same behaviour was being described in a number of the descriptions. Recognizing this, each behaviour was subsequently identified by code number. These code numbers were then recorded on the data summary sheets to identify each individual's specific perception of good and poor teaching behaviour at each of the three stages of professional development.

The same procedure was applied to the first classification of the descriptions of poor teaching behaviour. It was observed that the relationship between the behaviour identified as "good" or "poor" tended to involve a positive-negative dichotomy. For example, the behaviour described as good might be the teacher's understanding of the subject matter, whereas, it would be the teacher's lack of understanding which would be referred to in the description of poor teaching behaviour.

The behaviours which were identified during the first classification of the descriptions of good teaching behaviour and the frequency with which the behaviour was identified at each of the three stages of professional development are recorded in Table III. Similar data for the descriptions of poor teaching behaviour are included in Table IV.

TABLE III

GENERALIZED BEHAVIOURAL CHARACTERISTICS OF TEACHERS IDENTIFIED IN
THE DESCRIPTIONS OF GOOD TEACHING BEHAVIOUR AND THE FREQUENCY
OF RESPONSE AT THE THREE STAGES OF PROFESSIONAL DEVELOPMENT

Generalized Behaviour	Pre- train- ing	Post- train- ing	Post- teach- ing
1. no signs of favouritism	1	-	-
2. no unjust criticism	2	2	3
3. fair and reliable evaluation	-	-	-
4. shows a good sense of humor	5	-	2
5. willingness to admit to making mistakes	-	-	1
6. willingness to admit to not knowing every answer	1	-	-
7. has good voice modulation and uses voice well	-	-	-
8. shows enthusiasm for the subject under study	4	-	-
9. self-controlled at all times	5	1	1
10. shows consideration for students' feelings	1	3	-
11. help for students having academic problems	22	2	2
12. concern for the personal problems of students	4	-	-
13. willingness to help students make adjustments to problems	15	9	7
14. keeps good class control	8	9	2
15. refrains from using nagging as a disciplinary device	-	1	-
16. control over individual discipline problems	22	5	15
17. shows poise and assurance whatever the discipline problem	11	4	1
18. makes the aims of the lessons clear to the students	13	2	2
19. welcomes questions from students	6	4	2
20. entertains the opinions of students in class	6	4	2
21. allows for maximum student participation in lessons	14	15	19
22. plans lessons so as to develop student initiative and reasoning	10	3	4
23. shows flexibility - able to take advantage of classroom situations	4	12	10
24. uses personal experiences to advantage	9	-	3
25. exhibits sound knowledge of subject matter	15	1	1
26. lessons show evidence of planning and preparation	16	31	26
27. lessons are introduced well	16	41	4
28. lesson assignments are carefully explained	11	2	-
29. makes use of reference materials and outside sources	3	1	1
30. uses sound methods for drill and review	23	11	6
31. uses visual aids to advantage	28	45	49
32. relates subject matter to students' knowledge	18	6	5
33. gives clear and concise explanations	6	11	15
34. uses varied examples to clarify explanations	4	5	1

TABLE IV

GENERALIZED BEHAVIOURAL CHARACTERISTICS OF TEACHERS IDENTIFIED IN
THE DESCRIPTIONS OF POOR TEACHING BEHAVIOUR AND THE FREQUENCY
OF RESPONSE AT THE THREE STAGES OF PROFESSIONAL DEVELOPMENT

Generalized Behaviour	Pre- train- ing	Post- train- ing	Post- teach- ing
1. shows signs of favouritism	12	7	1
2. criticizes unjustly	6	2	2
3. unfair and unreliable evaluation of students' work	4	1	1
4. lacks a sense of humour	1	-	-
5. unwilling to admit to making mistakes	4	-	3
6. unwilling to admit to not knowing every answer	4	-	1
7. poor voice modulation and uses voice poorly	5	4	1
8. shows little enthusiasm for the subject under study	18	2	4
9. shows a serious lack of self-control	10	3	1
10. lacks consideration for students' feelings	12	16	1
11. offers no help to those having academic problems	7	6	2
12. shows no concern for the personal problems of students	2	-	1
13. unwilling to offer students help in making adjustments to problems	3	5	4
14. unable to keep class control	27	21	10
15. resorts to nagging as a disciplinary device	1	4	1
16. has little control over individual discipline problems	14	22	1
17. lacks poise and assurance when discipline problems arise	26	4	7
18. does not clarify the aims of the lessons for students	26	6	4
19. does not welcome questions from students	1	2	-
20. does not allow students to express their own opinions	1	2	-
21. allows only minimal student participation in lessons	5	5	1
22. lessons fail to offer opportunity for students to develop reasoning and initiative	5	23	5

TABLE IV (continued)

23.	inflexible - allows no deviation from the lesson plan	-	4	10
24.	unable to take advantage of personal experiences to make lessons more interesting	1	-	-
25.	exhibits lack of knowledge of subject matter	17	9	7
26.	lessons show little evidence of planning and preparation	15	16	24
27.	lessons are poorly introduced	18	27	23
28.	lesson assignments lack clarity	18	20	24
29.	little reference to outside sources	3	4	2
30.	dull and boring drill and review methods	3	5	6
31.	little or no use of visual aids	4	6	14
32.	subject matter is not related to students' knowledge	2	2	2
33.	explanations lack clarity	14	10	11
34.	lack of varied examples to clarify explanations	1	2	-

The information about each individual's perceptions was subsequently coded and punched on his data processing card.

Step II. Reducing the generalized teaching behaviours to six categories.

Examination of the lists of teaching behaviours or characteristics which evolved out of the first classification of the descriptions revealed that the behaviours or characteristics were often closely related. Six categories were then established which accounted for all the teaching behaviours and characteristics. The six categories were:

1. teaching behaviour which reflected positive or negative aspects of the teacher's personality
2. teaching behaviour which reflected the teacher's attention to individual differences and problems of students
3. teaching behaviour which reflected the teacher's ability to handle discipline problems
4. teaching behaviour which reflected the teacher's preparation and knowledge of subject matter
5. teaching behaviour which reflected the teacher's proficiency with teaching methods
6. teaching behaviour which specifically reflected the teacher's effectiveness in the use of visual aids.

The breakdown of the generalized behaviours into the six categories is included in Appendix I. The six categories were then coded and punched on each individual's data processing card.

Reader Reliability. Recognizing that the classification of the data thus far was solely dependent upon the investigator "reader," the

critical incident descriptions available for the sample were turned over to an independent "reader." The independent reader re-read each of the descriptions and classified each, using only the six categories. When the re-classification was completed, the two classifications of the descriptions, that is the one based upon the grouping of the generalized behaviours and the classification by the independent reader using the six categories only, were compared in order to determine "reader reliability." The results of the analysis are shown in Table V. The correlation co-efficient of $r = 0.73$ was higher than had been anticipated and suggested that the critical incident descriptions could be classified according to the proposed six categories. Closer examination of the raw data revealed that the differences in classification appeared to be clustered around groups 1 to 3, and groups 4 to 6. Accordingly, the six groups were then regrouped as two groups with groups 1 to 3 comprising one group and groups 4 to 6 comprising the other and the reliability co-efficient was computed. The results, reported in Table VI, showed that when grouped into two categories the reliability co-efficient was raised to $r = 0.81$.

Preliminary examination of the hypotheses. The intention had been to test the hypotheses using the six categories noted earlier. The data were mechanically sorted and the contingency tables were prepared. However, examination of the contingency tables showed that the number of cells having less than five cases far exceeded the twenty per cent allowed for the computation of chi square. The contingency tables

TABLE V

SHOWING THE CORRELATION COEFFICIENT AND THE FREQUENCY DISTRIBUTION
FOR THE TEST OF THE RELIABILITY OF THE CLASSIFICATION OF THE
CRITICAL INCIDENT DESCRIPTIONS OF THE SAMPLE BY THE
INVESTIGATOR AND THE INDEPENDENT READER

Independent Reader's Classification	Investigator's Classification						
	I	II	III	IV	V	VI	TOTALS
VI	0	0	0	9	41	68	118
V	8	1	7	38	163	14	231
IV	4	0	4	72	49	4	133
III	10	6	55	4	3	0	78
II	4	47	18	3	11	2	85
I	39	4	13	4	5	1	69
TOTALS	65	61	97	130	272	89	N = 714

$$r = 0.73$$

TABLE VI

SHOWING THE CORRELATION CO-EFFICIENT AND THE
 FREQUENCY DISTRIBUTION FOR THE TEST OF THE
 RELIABILITY OF THE CLASSIFICATION OF THE
 CRITICAL INCIDENT DESCRIPTIONS OF THE
 SAMPLE BY THE INVESTIGATOR AND
 THE INDEPENDENT READER

Independent Reader's Classification		Investigator's Classification	
Category	I	II	TOTALS
II	24	458	482
I	199	33	232
TOTAL	233	491	N = 714

$$r = 0.81$$

prepared for the hypothesis related to change in perception were adequate with minor re-grouping, and it was decided to test the hypothesis in order to determine whether or not change was occurring as hypothesized. The results of that analysis are summarized for each of the null hypotheses and for the descriptions of good and poor teaching behaviour in Table VII. Accepted levels of probability were considered to be .05 and .01 as indicated on the tables.

The levels of significant difference reported in Table VII supported the rejection of the null hypotheses. The results were accepted as evidence that training and experience do result in changes in the beginning teacher's perception of the critical elements of good and poor teaching behaviour. The results were also accepted as evidence that the Critical Incident Technique was functioning as an adequate measure of the beginning teacher's perception of teaching behaviour. Since the CIT appeared to be functioning well, it was considered profitable to continue with the investigation, although it was recognized that a further classification of the data; one that would reduce the number of categories, would be necessary.

Step III. Classifying the descriptions as method-centered or pupil-centered

The decision was made to re-classify the descriptions as "pupil-centered" or "method-centered" based upon the results of the second analysis of the reader reliability data and a re-examination of the

TABLE VII

RESULTS OF TESTING THE HYPOTHESES THAT TRAINING AND EXPERIENCE
WILL BE RELATED TO CHANGES IN PERCEPTIONS OF GOOD AND POOR
TEACHING BEHAVIOUR WHEN THESE HAVE BEEN IDENTIFIED ACCORD-
ING TO A SIX DIMENSIONAL CLASSIFICATION SCHEME

Null Hypotheses	Results			
	Good		Poor	
	χ^2	Sig.	χ^2	Sig.
1. That, there will be no difference in the perceptions of teaching behaviour held prior to training when compared with perceptions of teaching behaviour held after training	d.f.4		d.f.4	
	18.913	.001	136.848	.001
2. That, there will be no difference in the perceptions of teaching behaviour held at the end of the training period when compared with perceptions held at the end of the teaching year	d.f.4		d.f.4	
	16.081	.001	42.014	.001
3. That, there will be no differences in the perceptions of teaching behaviour held prior to experience when compared with perceptions of teaching behaviour held at the end of the teaching year	d.f.4		d.f.4	
	3.008	.NSD	135.801	.001

literature and research concerned with educational attitudes and classifications of teacher behaviour.

Examination of the reliability data had shown that although the reliability of the six-category classification of the teaching behaviours was acceptable, when categories 1 to 3 were grouped and categories 4 to 6 were grouped, the reliability coefficient was raised from $r = 0.73$ to $r = 0.81$. Reviewing the literature, it was also discovered that both educational attitudes and teaching behaviour had previously been examined in terms of a similar dichotomous classification.

McDaniels (1964), for example, reviewing the nature of the Minnesota Teacher Attitude Inventory (MTAI) has stated that the MTAI:

...is a questionnaire which proposed to measure the degree to which teachers and education students have a child-centered attitude in contrast to a technique-centered attitude as related to classroom procedure.
(p. 91)

The child-centered attitude and the technique-centered attitude appear to represent the extremes of a continuum of educational attitudes. The MTAI is designed primarily to measure specific attitudes which predict how well the teacher will get along with pupils. Permissive attitudes or those which suggest that the teacher has a concern for the pupil as a person are deemed to be desirable attitudes. Lack of concern for the pupil as a person and the attitude that it is the subject matter which is important in the classroom are considered to

be undesirable. Kerlinger (1958, 1963) examined attitudes towards education and proposed that attitudes may be conceived of as "polarized around two positions or points of view." (1963, p. 6) Using a Q sort technique to investigate the attitudes of different educators and laymen, Kerlinger concluded that educational attitudes could be identified dichotomously as "traditional" and "progressive" with traditional attitudes reflecting restrictiveness and progressive attitudes reflecting permissiveness. The bi-polar terms, restrictiveness and permissiveness have also been associated with studies referring to the authoritarian behaviour of teachers (Gage, 1963).

Similarly, teaching behaviour has been described as student-centered or instructor-centered. McKeachie (1963) reported on the ways in which the student-centered method was supposed to differ from the traditional instructor-centered method. These differences have been summarized by McKeachie and are reported in Table VII. For the purpose of this investigation, perceptions of teaching behaviour were dichotomously classified as pupil-centered and method-centered. The dimensions of pupil-centered and method-centered perceptions do differ from the dimensions identified by McKeachie for student-centered and instructor-centered teaching behaviour, but there are some similarities. Both the pupil-centered perceptions and the student-centered teaching focus attention on the personal relationship between the teacher and the pupils whereas method-centered perceptions

TABLE VIII

DIMENSIONS UPON WHICH STUDENT-CENTERED AND
INSTRUCTOR-CENTERED METHODS MAY DIFFER¹

Student-Centered	Instructor-Centered
 Goals	
Determined by group (Faw, 1949) Emphasis upon affective and attitudinal changes (Faw, 1949) Attempts to develop group cohesiveness (Bouard, 1951b)	Determined by instructor Emphasis upon intellectual changes No attempt to develop group cohesiveness
 Classroom Activities	
Much student participation (Faw, 1949) Student-student interaction (McKeachie, 1951) Instructor accepts erroneous or irrelevant student contributions (Faw, 1949) Group decides upon own activities (McKeachie, 1951) Discussion of students' personal experiences encouraged (Faw, 1949) De-emphasis of tests and grades (Asch, 1951) Students share responsibility for evaluation (Ashums & Haigh, 1952) Instructor interprets feelings and ideas of class member when it is necessary for class progress (Axelrod, 1955) Reaction reports (Asch, 1951)	Much instructor participation Instructor-student interaction Instructor corrects, criticizes or rejects erroneous or irrelevant student contribution Instructor determines activities Discussion kept on course materials Traditional use of tests and grades Instructor avoids interpretation of feelings No reaction reports

¹ Reproduced from Gage, 1963, p. 1134.

and instructor-centered teaching emphasize technique or method.

Specifically, the third step in the classification of the descriptions was that of grouping the three categories involving (1) the personality of the teacher, (2) attention to individual difference, and (3) discipline, since it was assumed that these three involved the teacher and the pupil in a personal relationship and that the pupil was the central concern. This category was termed pupil-centered. The three categories involving (1) teacher preparation and knowledge of subject matter, (2) methods, and (3) teaching materials were grouped and classified as method-centered teaching behaviour. These two categories were then coded and punched on the data processing cards of the 119 subjects who comprised the sample.

VII. THE STATISTICAL ANALYSIS

Once all the relevant information had been included on the data processing cards, the data were mechanically sorted and contingency tables were constructed. Following this, two tests for significance of difference for contingency tables were calculated.

The major analysis of the data involved the application of the chi square statistic to a contingency table to test independence, the expected frequencies having been derived from the data which were mechanically sorted.

For 2 X 2 contingency tables, chi square was calculated using

the following formula which incorporates Yate's correction for continuity, (Ferguson, 1959, p. 172).

$$\chi^2 = \frac{N(1 \text{ AD-BC } 1 - N/2)^2}{(A+B)(C+D)(A+C)(B+D)}$$

Where the degrees of freedom exceeded 1, the conventional chi square test for observed and expected frequencies was computed (Ibid.; p. 165). The accepted levels of probability were considered to be .05 or less, as indicated on the tables.

In some cases, examination of data, where the percentage of cells having less than 5 cases exceeded the accepted level of twenty percent, showed that the grouping procedure could be used with minimal distortion of the data. Where this was possible, cells were grouped in order that the statistical analysis could be carried out.

The analysis of the characteristics and rating data relating to the specific patterns of change in perception included the application of chi square and the Fisher Exact Probability Test (Siegel, 1956; pp. 96-104). The latter test was applied to the data when the problem of more than 20 per cent of the cells having less than five cases could not be ameliorated through grouping procedures without too much distortion of the data. When N was smaller than 30, levels of probability were determined using the "Table of Critical Values of D (or C) in the Fisher Test" in Siegel (pp. 256-269: adapted from Finney, 1948). Where N was larger than 30, the level of probability

was calculated from the formula:

$$p = \frac{(A + B)! (C + D)! (A + C)! (B + D)!}{N! A! C! D!}$$

Levels of probability at the .05 level or less were considered to be significant. It should be noted that the use of the Fisher test has been limited to the analysis of that data which could not be tested with chi square, for as Siegel (1956) has pointed out, a number of investigators have questioned the value of this statistical test.

CHAPTER IV

ANALYSIS OF THE DATA AND SUMMARY OF FINDINGS

This chapter is divided into five sections. Section one includes the analysis of the data relating to changes in perception resulting from teacher training and teaching experience. The second section examines the data as they relate to the direction of the change in perception. Sections three and four deal with the relationship between the patterns of change in perception over the three stages of professional development and selected personal and situational variables and rating variables respectively. The final section is devoted to a summary of the findings.

I. CHANGES IN PERCEPTION RESULTING FROM TRAINING AND EXPERIENCE

In order to test the general hypothesis that training and experience influence changes in beginning teachers' perceptions of good and poor teaching behaviour, perceptions were classified as pupil-centered or method-centered prior to entrance into the one year teacher training program and then compared with perceptions held at the end of the one year teacher training program and with perceptions following the first year of teaching experience. For the purpose of analysis, the data were mechanically sorted to determine how many subjects perceived pupil-centered or method-centered teaching behaviour as critical, in terms of good and poor teaching, at each of the three

stages of professional development. The numbers of subjects showing pupil-centered and method-centered perceptions of good and poor teaching at each of the three stages are indicated in Table IX.

Results of the Analysis of the Null Hypotheses

Using the data from Table IX, contingency tables were prepared and the following null hypotheses were tested for significance of difference.

Null Hypothesis Ia. That, there will be no significant difference in the group's perceptions of good teaching behaviour when perceptions held prior to the training program are compared with perceptions held at the end of the training program.

The difference in the group's perception of good teaching behaviour measured before and after the teacher training program was significant at the .01 level as reported in Table X. This evidence was considered sufficient to reject the null hypothesis and to support the hypothesis that perceptions of good teaching behaviour do change as a result of participation in the teacher training program.

Null Hypothesis Ib. That, there will be no significant difference in the group's perceptions of good teaching behaviour when perceptions held at the end of the teacher training year are compared with perceptions held at the end of the first year of classroom experience.

There was no significant difference in the group's perceptions of good teaching behaviour measured at the end of the training period when compared with perceptions of good teaching behaviour measured at

TABLE IX

SUMMARY OF THE NUMBER OF SUBJECTS SHOWING
PUPIL-CENTERED PERCEPTIONS OR METHOD-
CENTERED PERCEPTIONS OF GOOD AND POOR
TEACHING BEHAVIOUR AT THREE STAGES
OF PROFESSIONAL DEVELOPMENT

Stage	Perception			
	Good		Poor	
	P-C*	M-C**	P-C	M-C
I. Pre-training	51	68	67	52
II. Post-training	29	90	48	71
III. Post-teaching	28	91	28	91

*
P-C - pupil-centered

**
M-C - method-centered

TABLE X

SUMMARY OF THE RESULTS OF TESTING THE HYPOTHESES THAT
THERE ARE NO SIGNIFICANT DIFFERENCES IN BEGINNING
TEACHERS' PERCEPTION OF GOOD TEACHING
BEHAVIOUR WHEN THESE PERCEPTIONS
ARE COMPARED AT DIFFERENT LEVELS
OF PROFESSIONAL DEVELOPMENT

Comparison of Perceptions		d.f.	Results χ^2	Level of Sig.
1a	Pre-training 1 - post training	1	8.176	.01
1b	Post-training - post-teaching	1	.001	NSD
1c	Pre-training - post-teaching	1	9.170	.01

the end of one year of classroom teaching experience, as noted in Table X. The null hypothesis, therefore, cannot be rejected.

Null Hypothesis Ic. That, there will be no significant difference in the group's perceptions of good teaching behaviour when perceptions held prior to one year of teacher training are compared with perceptions held at the end of the first year of teaching experience.

The results of the comparison of the group's perceptions of good teaching behaviour prior to training and after the initial year of teaching, recorded in Table X, show a .01 level of significant difference. This level of significance supports the rejection of the null hypothesis. The evidence suggests that training and experience, together, result in changes in the beginning teacher's perception of good teaching behaviour.

Null Hypothesis IIa. That, there will be no significant difference in the group's perceptions of poor teaching behaviour when perceptions held prior to the training program are compared with perceptions held at the end of the year of teacher training.

The .01 level of significant difference reported in Table XI for the comparison of the group's perceptions before training with those held after training is sufficient for the rejection of the null hypothesis and the acceptance of the hypothesis that perceptions of poor teaching behaviour change as a result of the training experience.

TABLE XI

SUMMARY OF THE RESULTS OF TESTING THE HYPOTHESES THAT
THERE ARE NO SIGNIFICANT DIFFERENCES IN BEGINNING
TEACHERS' PERCEPTION OF POOR TEACHING
BEHAVIOUR WHEN THESE PERCEPTIONS
ARE COMPARED AT DIFFERENT LEVELS
OF PROFESSIONAL DEVELOPMENT

Comparison of Perceptions		d.f.	Results χ^2	Level of Sig.
2a	Pre-training - post-training	1	5.451	.02
2b	Post-training - post-teaching	1	6.914	.01
2c	Pre-training - post-teaching	1	24.905	.001

Null Hypothesis IIb. That, there will be no significant difference in the group's perceptions of poor teaching behaviour when perceptions held at the end of the teacher training year are compared with perceptions held at the end of the first year of teaching experience.

The results of the comparison of the group's perceptions of poor teaching behaviour held at the end of the teacher training year with those perceptions held at the end of the first year of teaching experience, indicated in Table XI, show a .01 level of significant difference. The evidence suggests that the year of teaching experience does influence a change in the group's perception of poor teaching behaviour.

Null Hypothesis IIc. That, there will be no significant difference in the group's perceptions of poor teaching behaviour when perceptions held prior to one year of teacher training are compared with perceptions held at the end of the first year of teaching experience.

A highly significant difference at the .001 level, as noted in Table XI, supports the rejection of the null hypothesis. The evidence suggests that training and experience, together, result in changes in the beginning teacher's perception of poor teaching behaviour.

Discussion

There is evidence to support the hypothesis that training influences perceptions of both good and poor teaching behaviour, whereas experience appears to result in changes in the perception of poor

teaching behaviour only. Assuming that the training course is realistically related to actual classroom practice (undoubtedly an underlying axiom of all teacher training programs), it seems reasonable to expect that teaching experience would not influence changes in perception if realistic perceptions had already been established during the training period. The difference in the effects of experience on the perceptions of good and poor teaching behaviour can only be explained by examination of the raw data in Table IX. First, at the pre-training stage, the raw scores suggest that a greater number of teacher candidates perceived good teaching behaviour as method-centered, whereas a greater number perceived poor teaching behaviour as pupil-centered. Statistical analysis showed that the difference was significant at the .01 level. At the end of the training year, perceptions of good and poor teaching have changed, but the raw scores suggest that the greater number of subjects are still perceiving poor teaching behaviour as pupil-centered. The difference was still statistically significant at the .01 level. By the end of the teaching year, the numbers of subjects perceiving poor teaching behaviour as pupil-centered and those perceiving good teaching behaviour as pupil-centered are exactly the same. The only conclusion that can reasonably be drawn from the raw data is that training influence changes in the student teacher's perception of good and poor teaching behaviour; with a greater number becoming method-centered. The initial year of

teaching experience, at least in terms of perceptions of poor teaching behaviour, appears to continue the process of change initiated by the training program, so that by the end of the year of teaching experience perceptions of good and poor teaching behaviour tend to be predominantly method-centered.

In conclusion, there appears to be sufficient evidence to support the hypothesis that training and experience affect changes in the beginning teacher's perception of the critical behaviour associated with good and poor teaching, when perceptions have been classified as pupil-centered or method-centered. Furthermore, the raw data suggests that perceptions of teaching behaviour tend to become more method-centered as a result of participation in the one year training program and one year of teaching experience.

II. DIRECTION OF THE CHANGE IN PERCEPTION

In the discussion of the curricula of the teacher training program in Chapter III, it was indicated that the training course tended to concentrate upon methods in elementary education. In the foregoing section, the comparison of the effect of experience on perceptions of good teaching behaviour as opposed to its effect on perceptions of poor teaching behaviour, strongly indicated that perceptions tended to become more method-centered. Accordingly, this section is concerned with a closer examination of the data to determine whether

perceptions do, in fact, become more method-centered as a result of a one year teacher training program and one year of teaching experience.

Since the data for this investigation do not lend themselves to a statistical analysis of the direction of the differences observed, evidence to support the general hypothesis that training and experience influence perceptions of teaching behaviour in the direction of method-centered perceptions was drawn from a comparison of the number of individuals whose perceptions did not change, that is remained stable, or did change as a result of training and/or experience. Specifically, this involved a comparison of four groups:

- | | | | | |
|----|-----------------|-------|-----------------|-----------|
| 1. | pupil-centered | ----- | pupil-centered | (stable) |
| 2. | method-centered | ----- | method-centered | |
| 3. | pupil-centered | ----- | method-centered | (changed) |
| 4. | method-centered | ----- | pupil-centered | |

when perceptions were examined:

1. before and after training
2. after training and after experience
3. before training and after experience

A summary of groups exhibiting these patterns of change in perception at each of the three stages, for both good and poor teaching behaviour, is shown in Table XII. The assumption underlying this method of comparison was that if training and/or experience did influence unidirectional changes in perception, there would be a significant difference between the number of pupil-centered individuals who became method-centered and the number of method-centered individuals who became pupil-centered and that the nature of the change could be inferred

TABLE XII

A SUMMARY OF THE NUMBERS OF SUBJECTS WHOSE PERCEPTIONS
OF GOOD AND POOR TEACHING BEHAVIOUR REMAINED STABLE
OR CHANGED WHEN PERCEPTIONS WERE COMPARED AT THE
THREE STAGES OF PROFESSIONAL DEVELOPMENT

Pattern		Pre-training Post-training		Post-training Post-teaching		Pre-training Post-teaching	
		N good	N poor	N good	N poor	N good	N poor
Stable	PC* - PC	11	26	7	12	16	19
	MC**- MC	50	30	69	55	56	43
Changed	PC - MC	40	41	36	36	35	48
	MC - PC	18	22	16	16	12	9

*PC - pupil-centered

**MC - method-centered

from the raw data.

The Null Hypotheses

In order to test the research hypothesis that training and experience influence uni-directional changes in the beginning teacher's perception of good and poor teaching behaviour and that the direction of that change is towards method-centered perceptions, the following null hypotheses were tested for significance of difference.

Null Hypothesis IIIa. That, there will be no significant difference in the number of student teachers who perceived good and poor teaching behaviour as pupil-centered and remained pupil-centered or changed to method-centered when compared with number of student teachers who were method-centered and remained method-centered or changed to pupil-centered before and after training.

The results of the analysis reported in Table XIII reveals a .001 level of significant difference for the perceptions of both good and poor teaching behaviour. Examination of the contingency tables shows clearly that persons originally exhibiting pupil-centered perceptions tended to become more method-centered in their outlook, whereas, those with method-centered perceptions at the outset of training tended to persist in this mode of perceiving. This provides strong evidence that training influences perceptions uni-directionally towards method-centeredness.

TABLE XIII

SHOWING THE CONTINGENCY TABLES
AND LEVELS OF SIGNIFICANT
DIFFERENCE FOR NULL
HYPOTHESIS IIIa

1. Perceptions of Good Teaching Behaviour

	<u>Stable</u>	<u>Change</u>	<u>Total</u>
Pupil-centered	11	40	51
Method-centered	50	18	68
TOTAL	61	58	119

Level of Significance .001

2. Perceptions of Poor Teaching Behaviour

	<u>Stable</u>	<u>Change</u>	<u>Total</u>
Pupil-centered	26	41	67
Method-centered	30	22	52
TOTAL	56	63	119

Level of Significance .001

Null Hypothesis IIb. That, there will be no significant difference in the number of beginning teachers who perceived good and poor teaching behaviour as pupil-centered and remained pupil-centered or changed to method-centered when compared with the number of beginning teachers who were method-centered and remained method-centered or changed to pupil-centered before and after the first year of teaching experience.

The levels of significant difference at the .01 level recorded in Table XIV strongly support the rejection of the null hypothesis. There is a clear indication in the raw data that teachers who leave training as pupil-centered change their perceptions during the first year of teaching, whereas, those who leave training as method-centered tend to remain method-centered during the initial year of teaching. This evidence supports the conclusion that teaching experience influences uni-directional changes in perception towards method-centeredness.

Null Hypothesis IIIc. That, there will be no significant difference in the number of beginning teachers who perceived good and poor teaching behaviour as pupil-centered and remained pupil-centered or changed to method-centered when compared with the number of beginning teachers who were method-centered and remained method-centered or changed to pupil-centered before training and after one year of teaching experience.

The levels of significant difference shown in Table XV, at the .01 and .001 levels respectively, for good and poor teaching behaviour, are evidence for the rejection of the null hypothesis. Training and

TABLE XIV

SHOWING THE CONTINGENCY TABLES
AND LEVELS OF SIGNIFICANT
DIFFERENCE FOR NULL
HYPOTHESIS IIIb

1. Perceptions of Good Teaching Behaviour

	Stable	Changed	Total
Pupil-centered	7	22	29
Method-centered	69	21	90
TOTAL	76	43	119

Level of Significance .01

2. Perceptions of Poor Teaching Behaviour

	Stable	Changed	Total
Pupil-centered	12	36	48
Method-centered	55	16	71
TOTAL	67	52	119

Level of Significance .01

TABLE XV

SHOWING THE CONTINGENCY TABLES
AND LEVELS OF SIGNIFICANT
DIFFERENCE FOR NULL
HYPOTHESIS IIIc

1. Perceptions of Good Teaching Behaviour

	Stable	Changed	Total
Pupil-centered	16	35	51
Method-centered	56	12	68
TOTAL	72	47	119

Level of Significance .001

2. Perceptions of Poor Teaching Behaviour

	Stable	Changed	Total
Pupil-centered	19	48	67
Method-centered	43	9	52
TOTAL	62	57	119

Level of Significance .01

experience do effect changes in perception and examination of the raw data, again, leads to the conclusion that pupil-centered perceptions tend to become more method-centered, whereas, method-centered perceptions tend to remain stable.

Discussion

The analysis of the null hypotheses relating to the stability and change of pupil-centered and method-centered perceptions, when compared at three stages of professional development for both good and poor teaching behaviour, offers strong support for the research hypothesis that training and experience influence uni-directional changes in perceptions of teaching behaviour held by the beginning teacher. Furthermore, non-statistical examination of the raw data has clearly indicated that those teacher candidates who enter the teacher training program exhibiting pupil-centered perceptions of good and poor teaching behaviour tend to have changed their perceptions to method-centered by the end of the teacher training year. Whereas, those who enter the program as method-centered tend to remain method-centered throughout the training year. Similarly, beginning teachers who are pupil-centered at the end of the training program tend to become method-centered as a result of their experiences in the classroom, whereas, those who leave the program as method-centered tend to remain method-centered during the initial year of teaching.

This data is accepted as sufficient evidence for the acceptance of the research hypothesis that changes in perception associated

with the one year teacher training program and the initial year of experience are uni-directional and that the direction of the change is toward method-centeredness.

III. THE RELATIONSHIP BETWEEN PATTERNS OF CHANGE IN PERCEPTION AND SELECTED PERSONAL AND SITUATIONAL CHARACTERISTICS OF BEGINNING TEACHERS

The analysis of the data thus far, has revealed that training and experience result in changes in the beginning teacher's perception of good and poor teaching behaviour, and that these perceptions tend to become increasingly method-centered. Assuming that perceptions at each of the three stages of professional development reflect, at least in part, the interaction of the individual with training and experience, it was hypothesized that patterns of change or stability of perceptions over the three stages of professional development would be related to certain personal and situational characteristics of beginning teachers, such as sex, grade XII matriculation average, teacher training average, and the grade or grades taught during the first year of teaching. In this section, the patterns of change in perception are identified, both broadly in terms of change and stability and specifically in terms of the pupil-centered -- method-centered dichotomy. Groups exhibiting these patterns of perceptual change are then compared in relation to the aforementioned personal and situational variables.

Identification of the Patterns of Change in Perception

The patterns of change in perception were identified broadly according to the stability and change of perceptions held prior to training, regardless of whether or not the initial perception was pupil-centered or method-centered. On this basis, it was possible to identify four broad patterns over the three stages of professional development. These included:

1. Original perception remained stable throughout training and experience (Stable-Stable pattern)
2. Original perception remained stable throughout training but changed as a result of teaching experience (Stable-Change pattern)
3. Original perception changed as a result of training and remained stable throughout teaching experience (Change-Stable pattern)
4. Original perception changed as a result of training and changed again as a result of teaching experience (Change-Change pattern)

A summary of the number of subjects exhibiting each of these broad patterns of change in perception for both good and poor teaching behaviour is noted in Table XVI.

The more specific patterns of change in perception based upon the method-centered and pupil-centered dichotomy were also classified over the three stages of professional development. Eight specific patterns were identified as follows:

TABLE XVI

SUMMARY OF THE NUMBERS OF SUBJECTS EXHIBITING
THE BROAD PATTERNS OF CHANGE IN PERCEPTION
OF GOOD AND POOR TEACHING BEHAVIOUR

Identification		N good	N poor
Post-training	Post-teaching		
Stable	Stable	45	33
Stable	Change	16	23
Change	Stable	31	34
Change	Change	27	29

- | | | |
|----|---|------------|
| 1. | pupil-centered--pupil-centered--pupil-centered | (PC-PC-PC) |
| 2. | pupil-centered--pupil-centered--method-centered | (PC-PC-MC) |
| 3. | pupil-centered--method-centered--method-centered | (PC-MC-MC) |
| 4. | pupil-centered--method-centered--pupil-centered | (PC-MC-PC) |
| 5. | method-centered--method-centered--method-centered | (MC-MC-MC) |
| 6. | method-centered--method-centered--pupil-centered | (MC-MC-PC) |
| 7. | method-centered--pupil-centered--pupil-centered | (MC-PC-PC) |
| 8. | method-centered--pupil-centered--method-centered | (MC-PC-MC) |

A summary of the numbers of subjects evidencing each of these specific patterns of change in perception of both good and poor teaching behaviour is indicated in Table XVII.

Test of the Hypothesis Based Upon the Broad Patterns of Change in Perceptions

Once the broad patterns of change in perception had been classified, subjects exhibiting each of the patterns were identified and grouped together. These groups were then examined in terms of four personal and situational characteristics, including: sex, grade level taught, teacher training average, and grade XII matriculation average. The following null hypothesis was tested:

Null Hypothesis IV. That, there will be no significant difference among groups classified according to the broad patterns of change in perception of good and poor teaching behaviour related to

- a.sex
- b.grade level taught
- c.teacher training average
- d.grade XII matriculation average

The results of the analysis of the data are summarized for perceptions of good and poor teaching behaviour in Tables XVIII and XIX respectively. The results show that there are no statistically

TABLE XVII

IDENTIFICATION OF THE SPECIFIC PATTERNS OF PERCEPTION
OVER THREE STAGES OF PROFESSIONAL DEVELOPMENT AND
THE NUMBERS OF SUBJECTS EXHIBITING THESE
PATTERNS FOR BOTH GOOD AND POOR
TEACHING BEHAVIOUR

Group	Pre- Training	Response* Post- Training	Post-1 yr. Teaching	N good	N poor
I	PC	PC	PC ;	5	8
II	PC	PC	MC :	6	18
III	PC	MC	MC	29	30
IV	PC	MC	PC	11	11
V	MC	MC	MC	40	25
VI	MC	MC	PC	10	5
VII	MC	PC	PC	2	4
VIII	MC	PC	MC	16	18

*PC - pupil-centered

MC - method-centered

TABLE XVIII

SUMMARY OF THE LEVELS OF SIGNIFICANT DIFFERENCE AMONG
GROUPS IDENTIFIED BY THEIR BROAD PATTERNS OF CHANGE
IN PERCEPTION OF GOOD TEACHING BEHAVIOUR WHEN
COMPARED IN TERMS OF SELECTED PERSONAL
AND SITUATIONAL VARIABLES

Variables	Level of Significance		
	χ^2	d.f.	Sig.
Sex	.255	3	NSD
Teacher Training Average	6.477	6	NSD
High School Average	5.622	6	NSD
Grade Taught	3.265	3	NSD

TABLE XIX

SUMMARY OF THE LEVELS OF SIGNIFICANT DIFFERENCE AMONG
 GROUPS IDENTIFIED BY THEIR BROAD PATTERNS OF CHANGE
 IN PERCEPTION OF POOR TEACHING BEHAVIOUR WHEN
 COMPARED IN TERMS OF SELECTED PERSONAL
 AND SITUATIONAL VARIABLES

Variables	Level of Significance		
	χ^2	d.f.	Sig.
Sex	4.031	3	NSD
Teacher Training Average	4.265	6	NSD
High School Average	5.769	6	NSD
Grade Taught	9.200	6	NSD

significant differences among the groups for either the good or the poor teaching behaviour. Therefore, the null hypothesis cannot be rejected.

Discussion: As the null hypothesis has not been rejected, there is no evidence to support the hypothesis that the stability and change patterns of perceptions of good and poor teaching behaviour over three stages of professional development are related to selected personal and situational characteristics of teachers as they are examined here. A probable explanation for the failure to reject the null hypothesis would be that the classification of the patterns of change in perception was too broad to discriminate among the groups, especially when the data had been subjected to rather rigorous statistical analysis.

Test of the Hypothesis Based Upon the Specific Patterns of Change in Perceptions

Groups exhibiting the specific patterns of change in perception for both good and poor teaching behaviour were identified and compared in terms of the selected personal and situational characteristics: sex, grade level taught, grade XII matriculation average, and the teacher training average. The following null hypothesis was tested:

Null Hypothesis V. That, there will be no significant difference among groups classified according to the specific patterns of change in perception of good and poor teaching behaviour related to

- a. sex
- b. grade level taught
- c. teacher training average
- d. grade XII matriculation average

The results of the statistical analysis of the data are recorded separately for each of the variables and separately for the specific patterns of change in perception of good and poor teaching behaviour in Tables XX to XXVII inclusive.

The analysis revealed that there were few differences among the groups which were statistically significant. Those differences which were observed may be summarized as follows:

a. sex. Group 3 (PC-MC-MC) was significantly different (.05 level) from groups 4 (PC-MC-PC) and 6 (MC-MC-PC) for the perceptions of poor teaching behaviour as indicated in Table XXI.

b. grade level taught. Group 1 (PC-PC-PC) was significantly different (.05 level) from group 2 (PC-PC-MC) and group 4 (PC-MC-PC) was significantly different (.05 level) from group 8 (MC-PC-MC) for the perceptions of poor teaching behaviour as shown in Table XXIII.

c. teacher training average. Group 3 (PC-MC-MC) was significantly different (.05 level) from group 5 (MC-MC-MC) for the perceptions of good teaching behaviour as recorded in Table XXIV. Group 7 (MC-PC-PC) was significantly different (.05 level and .01 level respectively) from groups 6 (MC-MC-PC) and 8 (MC-PC-MC) for the perceptions of poor teaching behaviour as noted in Table XXV.

d. grade XII matriculation average. No significant differences.

TABLE XX

SUMMARY OF THE LEVELS OF SIGNIFICANT DIFFERENCE WHEN
 GROUPS IDENTIFIED BY SPECIFIC PATTERNS OF CHANGE
 IN PERCEPTION OF GOOD TEACHING WERE
 COMPARED IN TERMS OF SEX

Pattern	1	2	3	4	5	6	7	8
1. PC-PC-PC								
2. PC-PC-MC	NSD							
3. PC-MC-MC	NSD	NSD						
4. PC-MC-PC	NSD	NSD	NSD					
5. MC-MC-MC	NSD	NSD	NSD	NSD				
6. MC-MC-PC	NSD	NSD	NSD	NSD	NSD			
7. MC-PC-PC	NSD	NSD	NSD	NSD	NSD	NSD		
8. MC-PC-MC	NSD	NSD	NSD	NSD	NSD	NSD	NSD	

TABLE XXI

SUMMARY OF THE LEVELS OF SIGNIFICANT DIFFERENCE WHEN
GROUPS IDENTIFIED BY SPECIFIC PATTERNS OF CHANGE
IN PERCEPTION OF POOR TEACHING WERE
COMPARED IN TERMS OF SEX

Pattern	1	2	3	4	5	6	7	8
1. PC-PC-PC								
2. PC-PC-MC	NSD							
3. PC-MC-MC	NSD	NSD						
4. PC-MC-PC	NSD	NSD	5%					
5. MC-MC-MC	NSD	NSD	NSD	NSD				
6. MC-MC-PC	NSD	NSD	5%	NSD	NSD			
7. MC-PC-PC	NSD	NSD	NSD	NSD	NSD	NSD		
8. MC-PC-MC	NSD	NSD	NSD	NSD	NSD	NSD	NSD	

TABLE XXII

SUMMARY OF THE LEVELS OF SIGNIFICANT DIFFERENCE
 BETWEEN GROUPS IDENTIFIED BY THE SPECIFIC
 PATTERN OF PERCEPTIONS OF GOOD TEACHING
 BEHAVIOR WHEN COMPARED IN TERMS
 OF THE GRADE LEVEL TAUGHT

Pattern	1	2	3	4	5	6	7	8
1. PC-PC-PC								
2. PC-PC-MC	NSD							
3. PC-MC-MC	NSD	NSD						
4. PC-MC-PC	NSD	NSD	NSD					
5. MC-MC-MC	NSD	NSD	NSD	NSD				
6. MC-MC-PC	NSD	NSD	NSD	NSD	NSD			
7. MC-PC-PC	NSD	NSD	NSD	NSD	NSD	NSD		
8. MC-PC-MC	NSD	NSD	NSD	NSD	NSD	NSD	NSD	

TABLE XXIII

SUMMARY OF THE LEVELS OF SIGNIFICANT DIFFERENCE
 BETWEEN GROUPS IDENTIFIED BY THE SPECIFIC
 PATTERN OF PERCEPTIONS OF POOR TEACHING
 BEHAVIOUR WHEN COMPARED IN TERMS
 OF GRADE LEVEL TAUGHT

Pattern	1	2	3	4	5	6	7	8
1. PC-PC-PC								
2. PC-PC-MC	5%							
3. PC-MC-MC	NSD	NSD						
4. PC-MC-PC	NSD	NSD	NSD					
5. MC-MC-MC	NSD	NSD	NSD	NSD				
6. MC-MC-PC	NSD	NSD	NSD	NSD	NSD			
7. MC-PC-PC	NSD	NSD	NSD	NSD	NSD	NSD		
8. MC-PC-MC	NSD	NSD	NSD	5%	NSD	NSD	NSD	

TABLE XXIV

SUMMARY OF LEVELS OF SIGNIFICANT DIFFERENCE
 BETWEEN GROUPS IDENTIFIED BY THE SPECIFIC
 PATTERN OF PERCEPTIONS OF GOOD TEACHING
 BEHAVIOUR WHEN COMPARED IN TERMS OF
 THEIR TEACHER TRAINING AVERAGE

Pattern	1	2	3	4	5	6	7	8
1. PC-PC-PC								
2. PC-PC-MC	NSD							
3. PC-MC-MC	NSD	NSD						
4. PC-MC-PC	NSD	NSD	NSD					
5. MC-MC-MC	NSD	NSD	5%	NSD				
6. MC-MC-PC	NSD	NSD	NSD	NSD	NSD			
7. MC-PC-PC	NSD	NSD	NSD	NSD	NSD	NSD		
8. MC-PC-MC	NSD	NSD	NSD	NSD	NSD	NSD	NSD	

TABLE XXV

SUMMARY OF THE LEVELS OF SIGNIFICANT DIFFERENCE
BETWEEN GROUPS IDENTIFIED BY THEIR SPECIFIC
PATTERN OF PERCEPTION OF POOR TEACHING
BEHAVIOUR WHEN COMPARED IN TERMS OF
THEIR TEACHER TRAINING AVERAGE

Pattern	1	2	3	4	5	6	7	8
1. PC-PC-PC								
2. PC-PC-MC	NSD							
3. PC-MC-PC	NSD	NSD						
4. PC-MC-PC	NSD	NSD	NSD					
5. MC-MC-MC	NSD	NSD	NSD	NSD				
6. MC-MC-PC	NSD	NSD	NSD	NSD	NSD			
7. MC-PC-PC	NSD	NSD	NSD	NSD	NSD	5%		
8. MC-PC-MC	NSD	NSD	NSD	NSD	NSD	NSD	1%	

TABLE XXVI

SUMMARY OF THE LEVELS OF SIGNIFICANT DIFFERENCE
 BETWEEN GROUPS IDENTIFIED BY THE SPECIFIC
 PATTERN OF PERCEPTIONS OF GOOD TEACHING
 BEHAVIOUR WHEN COMPARED IN TERMS OF
 THEIR GRADE XII AVERAGE

Pattern	1	2	3	4	5	6	7	8
1. PC-PC-PC								
2. PC-PC-MC	NSD							
3. PC-MC-MC	NSD	NSD						
4. PC-MC-PC	NSD	NSD	NSD					
5. MC-MC-MC	NSD	NSD	NSD	NSD				
6. MC-MC-PC	NSD	NSD	NSD	NSD	NSD			
7. MC-PC-PC	NSD	NSD	NSD	NSD	NSD	NSD		
8. MC-PC-MC	NSD	NSD	NSD	NSD	NSD	NSD	NSD	

TABLE XXVII

SUMMARY OF THE LEVELS OF SIGNIFICANT DIFFERENCE
 BETWEEN GROUPS IDENTIFIED BY THEIR SPECIFIC
 PATTERN OF PERCEPTIONS OF POOR TEACHING
 BEHAVIOUR WHEN COMPARED IN TERMS OF
 THEIR GRADE XII AVERAGE

Pattern	1	2	3	4	5	6	7	8
1. PC-PC-PC								
2. PC-PC-MC	NSD							
3. PC-MC-MC	NSD	NSD						
4. PC-MC-PC	NSD	NSD	NSD					
5. MC-MC-MC	NSD	NSD	NSD	NSD				
6. MC-MC-PC	NSD	NSD	NSD	NSD	NSD			
7. MC-PC-PC	NSD	NSD	NSD	NSD	NSD	NSD		
8. MC-PC-MC	NSD	NSD	NSD	NSD	NSD	NSD	NSD	

Discussion. The test of the null hypothesis revealed very few statistically significant differences between groups (classified according to the specific patterns of change in perception) related to the personal and situational variables. There is little support, therefore, for the research hypothesis. On the other hand, it should be recognized that the classification of the critical incident descriptions represented a fairly coarse estimate of perceptions and that the data was subjected to rather rigorous statistical analysis. Under these conditions, it is possible that even the few statistically significant differences found among the groups may be quite important.

Unfortunately, beyond establishing that there appears to be some relationship between the patterns of change in perception and the variables examined, the analysis reveals little about the nature of that relationship. It must be inferred, therefore, from an examination of the groups which differed. For example, the specific patterns of change in perception of those groups which differed in terms of sex and grade level taught does suggest that the post-teaching perceptions may be determining factors. For, in each case where two groups differ, the one common factor is that the post-teaching perception of one group is method-centered while the post-teaching perception of the other group is pupil-centered. As indicated in Chapter III, there were statistically significant differences between sex and grade level taught and it is possible that that relationship is operative here.

Previous studies, such as the one by Linden and Linden (1964) have suggested that female elementary teachers tend to be more pupil-centered in their attitudes, at least as measured by the MTAI. When the contingency tables for those groups which differed in terms of sex were examined, the raw data suggested that there were a proportionately larger number of males in the two groups which were method-centered following teaching experience, as compared with the number of males in the groups which were pupil-centered following teaching. Also, the raw data showed that there were a proportionately greater number of primary teachers in the pupil-centered groups, when groups were shown to differ in terms of grade level taught. These findings tend to support the conclusion that there is a relationship between sex and grade level taught and the specific patterns of change in perception. This conclusion, if it were valid, would have considerable relevance for those involved with the education of teachers, for it suggests that primary teachers may need a more pupil-centered program than the one offered in the one year teacher training course under study. It suggests, also, that there may be a need for greater diversification in programs for elementary teachers designed to meet the needs of teachers who will teach at different levels in the elementary school.

Although the analysis of the relationship between the teacher training average and the specific patterns of change in perception did

not reveal the nature of the differences, an examination of the specific patterns of groups which do differ yields some evidence which may be indicative of the relationship. The patterns suggest that when the teacher candidates' perceptions of teaching behaviour were method-centered and remained method-centered through the year of training, they differed in terms of academic performance, as indicated by the teacher training average from those teacher candidates who were either pupil-centered or method-centered but changed their perceptions during the teacher training year. That is, groups 5 (MC-MC-MC) and 6 (MC-MC-PC) differed from groups 3 (PC-MC-MC) and 7 (MC-PC-PC) respectively. The raw data in the contingency tables suggested that a proportionately greater number of the stable method-centered groups received higher academic standings at the end of teacher training. The obvious implication here is that method-centered teacher candidates who are able to and do internalize the expectations of the educational institution reflect this in their academic performance. Furthermore, this finding lends considerably more support to the conclusion that the program was method-centered, otherwise, why would the groups which were method-centered and remained method-centered tend to achieve at a higher level as indicated by their teacher training averages?

It must be recognized, the foregoing discussion notwithstanding, that the nature of the relationship between the specific patterns of change in perception and the selected personal and situational variables

has not been clearly established, and that there is little support for the hypothesis that an important relationship does exist.

THE RELATIONSHIP BETWEEN THE PATTERNS OF CHANGE IN PERCEPTION AND RATINGS OF TEACHING EFFECTIVENESS

This section will report on the analysis of the data to ascertain whether groups classified according to the broad and specific patterns of change in perception outlined in the previous section differ in terms of ratings of teaching effectiveness, including, the university observers' rating, the superintendent's rating, the student teaching rating, and the self-evaluation.

Test of the Hypothesis Based Upon the Broad Patterns of Change in Perceptions

The groups which had been classified according to the broad patterns of change in perception (see Table XVI, page 84) were compared in terms of the four ratings of teaching effectiveness. The following null hypothesis was tested:

- Null Hypothesis VI. That, there will be no significant difference among groups classified according to the broad patterns of change in perception of good and poor teaching behaviour related to ratings of their teaching effectiveness including:
- a. the university observers' rating
 - b. the superintendent's rating
 - c. the student teaching grade
 - d. the self-evaluation

The results of the analysis of the data are summarized for perceptions of good and poor teaching behaviour in Tables XXVIII and XXIX

TABLE XXVIII

SUMMARY OF THE LEVELS OF SIGNIFICANT DIFFERENCE AMONG
GROUPS IDENTIFIED BY THEIR BROAD PATTERN OF CHANGE
IN PERCEPTION OF GOOD TEACHING BEHAVIOR WHEN
COMPARED IN TERMS OF RATINGS OF THEIR
TEACHING EFFECTIVENESS

Rating Variables	Significance of Difference		
	χ^2	d.f.	Sig.
University Observers	3.670	3	NSD
District Superintendents	4.322	6	NSD
Self Evaluations	3.330	3	NSD
Student Teaching Grades	6.477	6	NSD

TABLE XXIX

SUMMARY OF THE LEVELS OF SIGNIFICANT DIFFERENCES AMONG
GROUPS IDENTIFIED BY THEIR BROAD PATTERN OF CHANGE
IN PERCEPTION OF POOR TEACHING BEHAVIOUR WHEN
COMPARED IN TERMS OF RATINGS OF THEIR
TEACHING EFFECTIVENESS

Rating Variables	Significance of Difference		
	χ^2	d.f.	Sig.
University Observers	4.234	3	NSD
District Superintendents	8.80	6	NSD
Self Evaluations	4.094	3	NSD
Student Teaching Grades	4.602	6	NSD

respectively. The results show that there are no statistically significant differences among the groups for the perceptions of good teaching behaviour, nor for the perceptions of poor teaching behaviour. Therefore, the null hypothesis cannot be rejected.

Discussion. There was no evidence to support the hypothesis that patterns of perceptions of good and poor teaching behaviour classified according to the stability and change of perceptions over the three stages of professional development are related to selected ratings of teaching effectiveness. This lack of evidence may be interpreted as an indication that there is no relationship between these variables. It should be noted, however, that the broad patterns of change in perception which have been classified here may simply be too coarse to differentiate among the groups, and, therefore, mitigated against the observance of any relationship.

Test of the Hypothesis Based Upon the Specific Patterns of Change in Perception

The groups which had been identified according to the specific patterns of change in perception (see Table XVII, p. 86) were compared in terms of the ratings of their teaching effectiveness. The following null hypothesis was tested:

Null Hypothesis VII. That, there will be no significant difference among groups classified according to the specific patterns of change in perception of good and poor teaching behaviour related to ratings of their teaching effectiveness, including:

- a. the university observers' rating
- b. the superintendent's rating
- c. the student teaching grade
- d. the self-evaluation

The results of the analysis of the data are recorded separately for each of the variables and separately for the patterns of change in perception of good and poor teaching behaviour in Tables XXX to XXXVII inclusive.

As the results show, there were few statistically significant differences among the groups, except for the following:

a. the university observers' rating. Group 3 (PC-MC-MC) was significantly different (.05 level) from groups 4 (PC-MC-PC) and 6 (MC-MC-PC) for the perceptions of good teaching behaviour as noted in Table XXX. Group 1 (PC-PC-PC) was significantly different (.05 level) from groups 5 (MC-MC-MC) and 6 (MC-MC-PC), while group 5 (MC-MC-MC) was also significantly different (.05 level) from group 4 (PC-MC-MC) for perceptions of poor teaching behaviour as indicated in Table XXXI.

b. the superintendent's rating. Group 6 (MC-MC-PC) differed significantly (.05 level) from all other groups except group 7 (MC-PC-PC) for the perceptions of poor teaching behaviour as shown in Table XXXIII. Table XXXIII also shows that group 2 (PC-PC-MC) was significantly different from groups 1 (PC-PC-PC), 3 (PC-MC-MC) and 7 (MC-PC-PC) while group 3 (PC-MC-MC) was significantly different from groups 4 (PC-MC-PC) and 7 (MC-PC-PC).

TABLE XXX

SUMMARY OF THE LEVELS OF SIGNIFICANT DIFFERENCE WHEN
GROUPS IDENTIFIED BY SPECIFIC PATTERNS OF CHANGE
IN PERCEPTION OF GOOD TEACHING WERE COMPARED
IN TERMS OF RATINGS BY UNIVERSITY OBSERVERS

Pattern	1	2	3	4	5	6	7	8
1. PC-PC-PC								
2. PC-PC-MC	NSD							
3. PC-MC-MC	NSD	NSD						
4. PC-MC-PC	NSD	NSD	5%					
5. MC-MC-MC	NSD	NSD	NSD	NSD				
6. MC-MC-PC	NSD	NSD	5%	NSD	NSD			
7. MC-PC-PC	NSD	NSD	NSD	NSD	NSD	NSD		
8. MC-PC-MC	NSD	NSD	NSD	NSD	NSD	NSD	NSD	

TABLE XXXI

SUMMARY OF THE LEVELS OF SIGNIFICANT DIFFERENCE WHEN
GROUPS IDENTIFIED BY SPECIFIC PATTERNS OF CHANGE
IN PERCEPTION OF POOR TEACHING WERE COMPARED
IN TERMS OF RATINGS BY UNIVERSITY OBSERVERS

Pattern	1	2	3	4	5	6	7	8
1. PC-PC-PC								
2. PC-PC-MC	NSD							
3. PC-MC-MC	NSD	NSD						
4. PC-MC-MC	NSD	NSD	NSD					
5. MC-MC-MC	5%	NSD	NSD	5%				
6. MC-MC-PC	5%	NSD	NSD	NSD	NSD			
7. MC-PC-PC	NSD	NSD	NSD	NSD	NSD	NSD		
8. MC-PC-MC	NSD	NSD	NSD	NSD	NSD	NSD	NSD	

TABLE XXXII

SUMMARY OF THE LEVELS OF SIGNIFICANT DIFFERENCE WHEN
 GROUPS IDENTIFIED BY SPECIFIC PATTERNS OF CHANGE
 IN PERCEPTION OF GOOD TEACHING WERE COMPARED
 IN TERMS OF RATINGS BY SUPERINTENDENTS

Pattern	1	2	3	4	5	6	7	8
1. PC-PC-PC								
2. PC-PC-MC	NSD							
3. PC-MC-MC	NSD	NSD						
4. PC-MC-PC	NSD	NSD	NSD					
5. MC-MC-MC	NSD	NSD	NSD	NSD				
6. MC-MC-PC	NSD	NSD	NSD	NSD	NSD			
7. MC-PC-PC	NSD	NSD	NSD	NSD	NSD	NSD		
8. MC-PC-MC	NSD	NSD	NSD	NSD	NSD	NSD	NSD	

TABLE XXXIII

SUMMARY OF THE LEVELS OF SIGNIFICANT DIFFERENCE WHEN
 GROUPS IDENTIFIED BY SPECIFIC PATTERNS OF CHANGE
 IN PERCEPTION OF POOR TEACHING WERE COMPARED
 IN TERMS OF RATINGS BY SUPERINTENDENTS

Pattern	1	2	3	4	5	6	7	8
1. PC-PC-PC								
2. PC-PC-MC	1%							
3. PC-MC-MC	NSD	5%						
4. PC-MC-PC	NSD	NSD	5%					
5. MC-MC-MC	NSD	NSD	NSD	NSD				
6. MC-MC-PC	5%	5%	5%	5%	5%			
7. MC-PC-PC	NSD	5%	1%	NSD	NSD	NSD		
8. MC-PC-MC	NSD	NSD	NSD	NSD	NSD	5%	NSD	

TABLE XXXIV

SUMMARY OF THE LEVELS OF SIGNIFICANT DIFFERENCE WHEN
GROUPS IDENTIFIED BY SPECIFIC PATTERNS OF CHANGE
IN PERCEPTION OF GOOD TEACHING WERE COMPARED
IN TERMS OF STUDENT TEACHING AVERAGES

Pattern	1	2	3	4	5	6	7	8
1. PC-PC-PC								
2. PC-PC-MC	NSD							
3. PC-MC-MC	NSD	5%						
4. PC-MC-MC	NSD	NSD	NSD					
5. MC-MC-MC	NSD	NSD	NSD	NSD				
6. MC-MC-PC	NSD	NSD	NSD	NSD	NSD			
7. MC-PC-PC	NSD	NSD	5%	NSD	NSD	NSD		
8. MC-PC-MC	NSD	NSD	NSD	NSD	NSD	NSD		

TABLE XXXV

SUMMARY OF THE LEVELS OF SIGNIFICANT DIFFERENCE WHEN
 GROUPS IDENTIFIED BY SPECIFIC PATTERNS OF CHANGE
 IN PERCEPTION OF POOR TEACHING WERE COMPARED
 IN TERMS OF STUDENT TEACHING AVERAGES

Pattern	1	2	3	4	5	6	7	8
1. PC-PC-PC								
2. PC-PC-MC	NSD							
3. PC-MC-MC	NSD	NSD						
4. PC-MC-PC	NSD	NSD	NSD					
5. MC-MC-MC	NSD	NSD	NSD	NSD				
6. MC-MC-PC	NSD	NSD	NSD	NSD	5%			
7. MC-PC-PC	NSD	NSD	NSD	NSD	5%	NSD		
8. MC-PC-MC	NSD	NSD	NSD	NSD	NSD	NSD	NSD	

TABLE XXXVI

SUMMARY OF THE LEVELS OF SIGNIFICANT DIFFERENCE WHEN
 GROUPS IDENTIFIED BY SPECIFIC PATTERNS OF CHANGE
 IN PERCEPTION OF GOOD TEACHING WERE COMPARED
 IN TERMS OF THE SELF-EVALUATIONS

Pattern	1	2	3	4	5	6	7	8
1. PC-PC-PC								
2. PC-PC-MC	NSD							
3. PC-MC-MC	NSD	NSD						
4. PC-MC-PC	NSD	NSD	NSD					
5. MC-MC-MC	NSD	NSD	NSD	NSD				
6. MC-MC-PC	NSD	NSD	NSD	NSD	NSD			
7. MC-PC-PC	NSD	NSD	NSD	NSD	NSD	NSD		
8. MC-PC-MC	NSD	NSD	NSD	NSD	NSD	NSD	NSD	

TABLE XXXVII

SUMMARY OF THE LEVELS OF SIGNIFICANT DIFFERENCE WHEN
 GROUPS IDENTIFIED BY SPECIFIC PATTERNS OF CHANGE
 IN PERCEPTION OF POOR TEACHING WERE COMPARED
 IN TERMS OF THE SELF-EVALUATIONS

Pattern	1	2	3	4	5	6	7	8
1. PC-PC-PC								
2. PC-PC-MC	NSD							
3. PC-MC-MC	NSD	NSD						
4. PC-MC-PC	NSD	NSD	NSD					
5. MC-MC-MC	NSD	NSD	NSD	NSD				
6. MC-MC-PC	NSD	NSD	NSD	NSD	NSD			
7. MC-PC-PC	NSD	NSD	5%	NSD	NSD	NSD		
8. MC-PC-MC	NSD	NSD	NSD	NSD	NSD	NSD	NSD	

c. the student teaching grade. Group 3 (PC-MC-MC) was significantly different (.05 level) from groups 2 (PC-PC-MC) and 7 (MC-PC-PC) for the perceptions of good teaching behaviour as indicated in Table XXXIV. Group 5 (MC-MC-MC) differed significantly (.05 level) from groups 6 (MC-MC-PC) and 7 (MC-PC-PC) for the perceptions of poor teaching behaviour as shown in Table XXXIV.

d. self-evaluation. Group 3 (PC-MC-MC) was significantly different (.05 level) from group 7 (MC-PC-PC) for the perceptions of poor teaching behaviour as noted in Table XXXVII.

Discussion. The analysis of the data tends to confirm the hypothesis that groups classified according to their specific patterns of change in perception of good and poor teaching behaviour will differ in terms of ratings of their teaching effectiveness. Exactly how these groups differ cannot be determined from the analysis. However, examination of the patterns suggests the possibility of some rather interesting relationships.

In Chapter III, it was noted that the university observers and the superintendents differed in their evaluations of teaching effectiveness and it was suggested that this might be due to their different expectations for the teacher's classroom behaviour. Furthermore, it was tentatively suggested that as a result of their particular backgrounds, the university observers might be more pupil-centered, whereas the superintendents would probably be more method-centered.

This conclusion receives considerable support from the data examined here, for there was a strong indication in the raw data that where two groups differed in terms of the university observers' ratings, the group showing method-centered perceptions at the end of the first year of teaching tended to be rated lower than those who were pupil-centered. Similarly, where two groups differed in terms of the superintendent's ratings, those groups which were method-centered following the year of teaching tended to be rated higher than those groups which had been pupil-centered following the year of teaching. This finding offers considerable support for the proposition that where there exists a congruence between the rater's perceptions and expectations and those of the person being rated, there will be a tendency for that person to be judged as an effective teacher. This proposition, which is in accord with the theoretical framework for this investigation outlined earlier has serious implications for teachers, administrators and those involved in the preservice and inservice education of teachers.

SUMMARY

This chapter has dealt with the analysis and interpretation of the findings of this study. Seven null hypotheses were tested in accordance with the research hypotheses outlined in Chapter I. The evidence in the first section clearly supports the research hypothesis that training and experience influence the beginning teacher's

perceptions of teaching behaviour. The results reported in section two strongly indicated that the change in perception was unidirectional towards method-centered perceptions. In the third section, groups exhibiting broad and specific patterns of change in perception were examined in terms of certain selected and situational characteristics and the results showed that, although there were few differences among the groups which were statistically different, differences that did exist may be indicative of some important relationships. Similarly, when the groups were compared in terms of ratings of their teaching effectiveness, the results offered firm evidence to support the conclusion that patterns of change in perception were related to the ratings of effectiveness.

CHAPTER V

SUMMARY, CONCLUSIONS AND IMPLICATIONS

The major purpose of this study was to determine the effects of a one year teacher training program and one year of teaching experience on beginning teachers' perceptions of good and poor teaching behaviour. Three sub-problems were also studied, including (1) the nature of the change in perception, (2) the relationship between the patterns of change in perception and selected personal and situational characteristics of beginning teachers, and (3) the relationship between the patterns of change in perception and ratings of the beginning teachers' effectiveness in the classroom. The investigation was longitudinal in that the perception data were collected for the same subjects at three stages of their professional development: upon enrollment in a one year teacher training program, at the end of the program, and after one year of teaching experience. The sample was drawn from teacher training students registered in the one year professional program in the Faculty of Education at the University of Alberta in 1958-59, who subsequently completed one year of teaching at the elementary school level.

A modification of the Critical Incident Technique was used as a means of collecting perceptions of teaching behaviour at the three stages of professional development. On each occasion, the subjects were asked to describe teaching situations drawn from their past

experiences which they considered representative of good and poor teaching behaviour. The descriptions were then examined and classified as reflecting either pupil-centered or method-centered teaching behaviour. This two-fold classification of perceptions of teaching behaviour served as the basic unit in the analysis of the data of the investigation.

SUMMARY OF THE FINDINGS

Data were collected and analyzed in accordance with four research hypotheses which were developed from the problems to be investigated. In order to facilitate a summary of the findings of the study, they will be presented in terms of those four hypotheses.

Hypothesis I

The first research hypothesis was that perceptions of good and poor teaching behaviour held by teacher candidates would change as a result of training and experience. The analysis of the research hypothesis involved the testing of the following null hypotheses:

Null Hypothesis Ia. That, there will be no significant difference in the group's perceptions of good teaching behaviour when perceptions held prior to the training program are compared with perceptions held at the end of the training program.

Null Hypothesis Ib. That, there will be no significant difference in the group's perceptions of good teaching behaviour when perceptions held at the end of the teacher training year are compared with perceptions held at the end of the first year of classroom experience.

Null Hypothesis Ic. That, there will be no significant difference in the group's perceptions of good teaching behaviour when perceptions held prior to one year of teacher training are compared with perceptions held at the end of the first year of teaching experience.

Null Hypothesis IIa. That, there will be no significant difference in the group's perceptions of poor teaching behaviour when perceptions held prior to the training program are compared with perceptions held at the end of the first year of teacher training.

Null Hypothesis IIb. That, there will be no significant difference in the group's perceptions of poor teaching behaviour when perceptions held at the end of the teacher training year are compared with perceptions held at the end of the first year of teaching experience.

Null Hypothesis IIc. That, there will be no significant difference in the group's perceptions of poor teaching behaviour when perceptions held prior to one year of teacher training are compared with perceptions held at the end of the first year of teaching experience.

The statistical analysis supported the rejection of each of the null hypotheses, with the exception of Ib which dealt with changes in perceptions of good teaching associated with teaching experience. As null hypothesis Ib was not rejected, whereas IIb was rejected, this raised a question as to why teaching experience appeared to change beginning teachers' perceptions of good teaching behaviour but not poor teaching behaviour. An examination of the raw data showed that perceptions of both good and poor teaching behaviour appeared to have

become predominantly method-centered by the end of training. However, a proportionately greater number of the student teachers still persisted in perceiving poor teaching behaviour as pupil-centered when compared with the number who were perceiving good teaching behaviour as pupil-centered. By the end of the year of teaching experience, it was apparent that a number of those who had still exhibited pupil-centered perceptions of poor teaching at the end of the program, now tended to perceive poor teaching as method-centered. Essentially, these findings suggested that experience appeared to have stabilized the method-centered perceptions which developed during training, while continuing the process of changing pupil-centered perceptions to method-centered perceptions. In other words, experience affected perceptions in the same way as teacher training. A more complete analysis of the direction of changes follows in the next section.

In total, the findings provided strong evidence for the acceptance of the research hypothesis that training and experience influence the beginning teacher's perceptions of good and poor teaching behaviour. When added to similar findings by other investigators (Callis, 1950; Day, 1959; and Linden and Linden, 1964), the findings supported the proposition set forth in the theoretical framework of the investigation. That is, that training and experience influence expectations for teaching behaviour and, therefore, result in changes in what is perceived as critical teacher behaviour.

Hypothesis II

It was hypothesized that if perceptions of teaching behaviour were found to change as a result of training and/or experience, the change in perception would be in the direction of method-centered perceptions of teaching behaviour. It was anticipated that the change would be towards method-centered perceptions because the curricula of the teacher training program tended to emphasize teaching methods. Since the data did not lend themselves to a statistical analysis of the direction of the change in perception, the test of the research hypothesis involved the testing of the following null hypotheses by an examination of the raw data and noting directional trends.

Null Hypothesis IIIa. That, there will be no significant difference in the number of student teachers who perceived good and poor teaching behaviour as pupil-centered and remained pupil-centered or changed to method-centered when compared with the number of student teachers who were method-centered and remained method-centered or changed to pupil-centered before and after training.

Null Hypothesis IIIb. That, there will be no significant difference in the number of beginning teachers who perceived good and poor teaching behaviour as pupil-centered and remained pupil-centered or changed to method-centered when compared with the number of beginning teachers who were method-centered and remained method-centered or changed to pupil-centered before and after the first year of teaching experience.

Null Hypothesis IIIc. That, there will be no significant difference in the number of beginning teachers who perceived good and poor teaching behaviour as pupil-centered and remained pupil-centered or changed to method-centered when compared with the number of beginning teachers who were method-centered and remained method-centered or changed to pupil-centered before training and after one year of teaching experience.

The basic assumption underlying the examination of the raw data was that if training and/or experience did influence unidirectional changes in perception, there would be a statistically significant difference between the number of pupil-centered individuals who became method-centered and the number of method-centered individuals who became pupil-centered at each of the three periods of professional development.

The analysis supported the rejection of each of the null hypotheses. Examination of the raw data in the contingency tables showed that if the teacher candidate entered the training program as method-centered, he tended to remain method-centered, whereas, if he entered the training program as pupil-centered, he tended to become method-centered. Beginning teachers who left the program as method-centered tended to remain method-centered through the year of teaching, whereas those who left the program as pupil-centered tended to become method-centered during the year of experience. These results were interpreted as indicating that training and experience, as they were

examined here, influence uni-directional changes in the beginning teachers' perceptions of teaching behaviour and that the direction of the change was toward method-centered perceptions.

The findings departed from those of other investigators, in that, earlier studies (Callis, 1950; Linden and Linden, 1964) had indicated that attitudes tend to become more pupil-centered during training. Similarly, previous investigators had reported that, at least in terms of the attitudes examined in the Minnesota Teacher Attitude Inventory, experience had the effect of changing attitudes in the opposite direction to those which developed during the training program. Undoubtedly, the lack of congruence between the findings of this study and those of other investigators may be attributed to variations in the programs which were investigated, and also to differences in the techniques which were employed as measures of attitudes and perceptions. At the same time, however, it should be noted that the acceptance of the research hypothesis of this study was predicted in the theoretical framework set forth in Chapter II. This may be interpreted as additional evidence to support the view that during the training program, the institutional expectations are transmitted to the beginning teacher and affect his perceptions of teaching behaviour.

Hypothesis III

The third research hypothesis was that groups classified according to their patterns of change in perception over the three periods of professional development would differ significantly in terms of

selected personal and situational characteristics, such as, sex, grade level taught, teacher training average, and grade XII matriculation average. The patterns of change in perception were classified broadly according to the degree of stability and change in perceptions over the three stages of professional development, regardless of the initially held perception. The patterns of change in perception were also classified specifically according to the method-centered -- pupil-centered dichotomy at each of the three stages. Using the data based upon both the broad and specific patterns of change in perception, the following two null hypotheses were examined:

Null Hypothesis IV. That, there will be no significant difference among the groups classified according to their broad patterns of change in perception of good and poor teaching behaviour related to:

- a. sex
- b. grade level taught
- c. teacher training average
- d. grade XII average

The statistical analysis failed to support the rejection of the null hypothesis. It was concluded that the classification was too broad to discriminate among the groups, especially when the data had been subjected to rather rigorous statistical analysis.

Null Hypothesis V. That, there will be no significant difference among the groups classified according to their broad patterns of change in perception of good and poor teaching behaviour related to:

- a. sex
- b. grade level taught
- c. teacher training average
- d. grade XII matriculation average

The results of the test of the null hypothesis offered little support for the acceptance of the research hypothesis. However, in view of the unstructured nature of the CIT as a measure of perception, and the strength of the statistical analysis, it was tentatively concluded that even the few statistically significant differences among the groups might be important. Subsequent examination of the raw data suggested that where two groups were statistically different in terms of the grade level variable, the patterns of the groups showed that the final perception appeared to be a determining factor. That is, where one group was pupil-centered at the end of the year of teaching - the other group was method-centered. When the numbers of primary, intermediate, and junior high teachers in each group were examined, there was a tendency for there to be a proportionately larger number of primary teachers in the group which was pupil-centered after teaching. When the data pertaining to the sex variable were examined, similar observations applied, except that the pupil-centered groups included a proportionately greater number of females when compared with the method-centered groups. In view of these observations, it was concluded that perceptions of teaching behaviour tended to be related to sex and grade level taught. This conclusion agreed with those of other investigators (Corrigan and Griswald, 1963; Linden and Linden, 1964) who had found that females and primary teachers tended to be more pupil-centered when compared with males and teachers in the higher grades. Similarly, the findings lent some support to the

theoretical proposition outlined in Chapter II, which stated that personality and past experience would be factors influencing perception.

Hypothesis IV

It was hypothesized that the broad and specific patterns of change in perception would be related to four selected ratings of teaching effectiveness: a student teaching grade, superintendents' and university observers' ratings, and a self-evaluation. Two null hypotheses were tested:

- Null Hypothesis VI. That, there will be no significant difference among groups classified according to the broad patterns of change in perception of good and poor teaching related to ratings of their teaching effectiveness, including:
- a. the university observers' ratings
 - b. the superintendents' ratings
 - c. the student teaching grades
 - d. the self-evaluations

The results of the analysis for both the good and poor teaching behaviour revealed no significant differences among the groups and therefore the null hypothesis could not be rejected.

- Null Hypothesis VII. That, there will be no significant difference among groups classified according to the specific patterns of change in perception of good and poor teaching related to ratings of their teaching effectiveness, including:
- a. the university observers' ratings
 - b. the superintendents' ratings
 - c. the student teaching grades
 - d. the self-evaluations

The analysis of the data offered substantial support for the research hypotheses, as a number of groups were found to be statistically different when compared in terms of the rating variables. This was especially true of the university observers' ratings and the superintendents' ratings. Examination of the patterns of the groups which did differ and the breakdown of the ratings of subjects in each of those groups suggested that the evaluative decisions of the university observers and the superintendents appeared to be related to the pupil-centeredness or method-centeredness of the beginning teachers' perceptions. That is, where two groups differed in terms of these ratings, the group which was method-centered at the end of the year of teaching had a proportionately larger number of teachers who had been rated as "good" by the superintendents, while the group which was pupil-centered at the end of the year of teaching had a proportionately larger number of teachers who had been rated as "good" by the university observers. In the discussion of the theoretical framework, it had been suggested that ratings of teaching effectiveness depended more upon the congruence of expectations between the evaluator and the person being rated, rather than the actual behaviour of the person being rated. This proposition received some support from the findings here, for it was apparent that the university observers, who were considered to be more pupil-centered, tended to rate the pupil-centered groups higher. Whereas, the superintendents, who were considered to be more method-centered, tended to rate the method-centered groups higher.

II. CONCLUSIONS

The findings of this study give rise to the following conclusions:

1. Teacher training, at least in terms of the one year program investigated, resulted primarily in a uni-directional change in the teacher candidates' perceptions of good and poor teaching behaviour and the direction of this change was toward method-centered perceptions.
2. The first year of teaching experience resulted in changes in the beginning teachers' perceptions of poor teaching behaviour in that pupil-centered perceptions of poor teaching behaviour tended to change to method-centered. The method-centered perceptions of the beginning teachers, however, tended to remain stable during the first year of teaching.
3. There is an indication that sex and grade level taught are related to the specific patterns of perception which developed over the three stages of professional development. Further, examination of the data suggested that both primary and female teachers tended to be more pupil-centered.
4. Groups exhibiting specific patterns of perception stability differed in terms of ratings of their teaching effectiveness. There is some indication from this data that these differences are a reflection of the congruence or a lack of congruence between the expectations of the evaluator and the expectations of those being rated.

III. IMPLICATIONS

The findings and conclusions of this study suggest the following implications:

1. A basic assumption underlying teacher education is that the attitudes, perceptions, and values of the teacher candidate are altered during the programs. The findings of this study would imply that this assumption has some validity, for it was clearly indicated that perceptions of teaching behaviour changed during a one year teacher training program.
2. This study has indicated that training and experience resulted in uni-directional changes in beginning teachers' perceptions of teaching behaviour and that the direction of that change was towards method-centered perceptions. As such, the findings disagreed with those of earlier studies (Callis, 1950; Linden and Linden, 1964), in that it had been suggested that the teacher education programs investigated had tended to result in the development of pupil-centered attitudes which were not sustained during subsequent teaching experience. An implication of this disparity in findings is that the one year program investigated in this study was more realistically related to classroom practice. This does not imply, that method-centered programs are preferable, but it does suggest that there is a need for careful evaluation to determine what might constitute the best measures for helping the teacher candidate make the transition from student to teacher.

3. Examination of the data revealed that sex and grade level taught were related to perceptions of teaching behaviour, and that primary teachers and female teachers tended to be more pupil-centered after the year of teaching. However, it is not possible from this study to determine which of these factors, sex or grade level, is operative in the development of perceptions and expectations, for the majority of primary teachers are female. The question remains, does this relationship imply that ultimately pupil-centered female teacher candidates are best suited for teaching in the primary grades, or conversely, is primary teaching experience the circumstance that gives rise to pupil-centered perceptions and expectations? The implication is that a better understanding of the relationship between the personal and situational characteristics of teachers and perceptions and expectations might provide some useful information for determining the nature of programs for educating teachers to assume the responsibilities of different grade levels or teaching positions. Similarly, this information could be valuable in directing teacher candidates to areas for which they were better suited.

4. The findings indicated that groups exhibiting specific patterns of change in perception also differed in terms of ratings of their teaching effectiveness. The implication of this is that perceptions of and expectations for teaching behaviour are reflected in the teachers' classroom performance. Moreover, if perceptions and

expectations are influential in directing classroom behaviour, they should, in turn, differentiate between the potentially good and poor teacher. In addition, this would suggest that there is a need to identify those specific perceptions and expectations which are critical for effective teaching, so that these may be communicated to the beginning teacher through the teacher education program. However, examination of the raw data also revealed differences in evaluations of groups exhibiting different patterns of change in perception which were in agreement with the observations of Getzels and Guba (1957). That is, that evaluations of teaching behaviour depend upon the degree of congruence between the expectations of the rater and ratee rather than the actual behaviour observed. If this observation is valid, it would follow, therefore, that the teacher training institution and the school system should strive together to clarify and agree upon the expectations to be communicated during training. Otherwise, the beginning teacher must either internalize new expectations upon assuming the classroom role, or face considerable dissatisfaction in terms of assessments of her classroom effectiveness.

IV. LIMITATIONS OF THE STUDY

The conclusions drawn from this study and the implications suggested must be considered not only in terms of the limitations outlined in Chapter I, but others, as well, which became evident as the study progressed.

1. Although the sample used in this study did not differ significantly from the total teacher training class when they were compared in terms of the personal and situational variables, and in the ratings of teaching effectiveness, complete critical incident descriptions were not available for the total teacher training class. Therefore, it was not possible to compare the sample with the entire teacher training class according to their perceptions of teaching behaviour. Hence, there is the possibility that the perceptions of teaching behaviour of the sample are not representative of the teacher training class as a whole.

2. As a number of the courses were offered by several instructors, it is possible that some of the students may in fact have had quite different instruction throughout the program. It should also be noted that the students were grouped together in stable classes throughout the program, and therefore, it is possible that different class leadership and interaction patterns may have developed which could have resulted in differences both in the socializing influences of the group on the individual, and correspondingly, in its members' expectations for teaching behaviour.

3. In this study, the teaching experience of the sample has been assumed to be typical of that experienced by all beginning teachers. Except for the grade level taught, there was no attempt to investigate or control any other relevant factors in the teaching environment, such

as the geographic area in which the school was located, the socio-economic satisfaction of the teacher, or the availability of in-service programs or consultative services which might have influenced the development of the beginning teachers' perceptions.

4. As the changes in non-education students' perceptions of critical teaching behaviour were not considered in this study, there is no proof that the changes noted and attributed to teacher training would not have resulted from any post-secondary program students may have taken following the completion of their grade XII matriculation work.

V. SUGGESTIONS FOR FUTURE RESEARCH

During the investigation, questions beyond the scope of the data repeatedly arose which might provide the basis for further studies related to changes in beginning teachers' attitudes, perceptions, and expectations. Among the more obvious investigations which might be proposed are:

1. An investigation to determine the effects of training and experience on the beginning teachers' perceptions of more precise dimensions of teacher behaviour, other than the two dimensions of pupil-centered and method-centered behaviour used in this study.

2. An investigation to determine the effects of different teacher education programs on the teacher candidates' perceptions of

teaching behaviour and the stability of these perceptions after varying amounts of teaching experience.

3. An investigation to determine more exactly the relationship between an individual's personal and situational characteristics and his perceptions of and expectations for teaching behaviour.

4. An investigation to determine more exactly the role played by the evaluators' perceptions and expectations as factors influencing his judgements of teaching behaviour.

5. An investigation to determine the influence of changing perceptions and expectations as factors subsequently affecting overt classroom behaviour.

6. An investigation to determine whether education students and non-education students differ in their perceptions of teaching behaviour and the effects of different post-secondary programs on those expectations and perceptions.

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A P P E N D I C E S

APPENDIX A

THE SIX CRITICAL INCIDENT FORMS AND SAMPLES OF THE DESCRIPTIONS

Critical Incident (Spring)

- A. In the space below describe one incident, taken from your practice teaching experience during the past year, which you believe illustrates good teaching. That is, you will describe briefly and clearly an incident in which the teacher acted in a certain way (introduced a lesson; taught a lesson; conducted a class; handled a problem) which was good teaching.

Your account should be:

- (1) accurate and detailed enough to be clearly understood.

- (2) objective and unbiased; just describe the incident.

- (3) a specific situation.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

PART D - CRTIFICAL INCIDENTS

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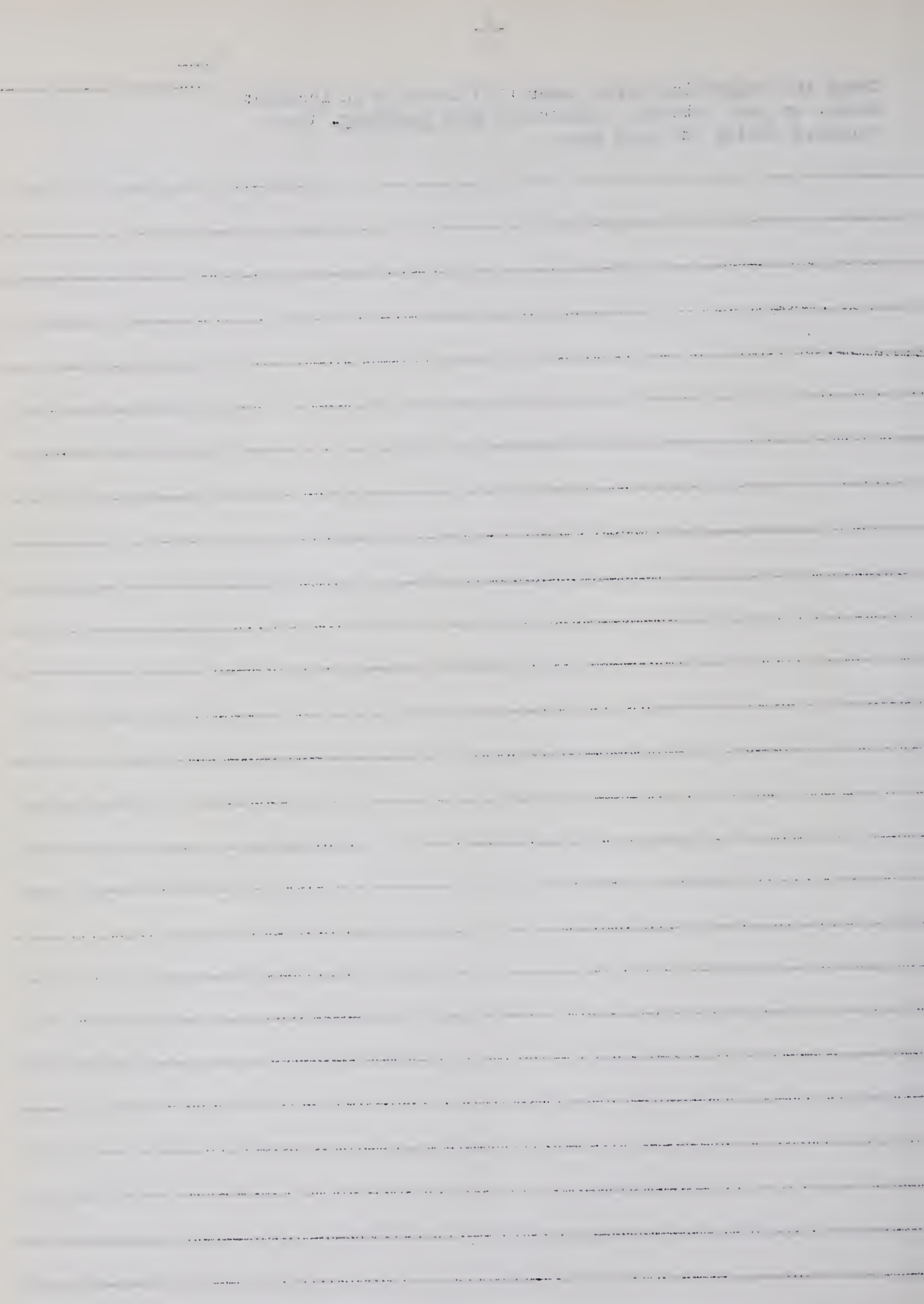
21. In the space below describe one incident taken from your school experience during the current school year which you believe illustrates good teaching. That is, you will describe briefly and clearly an incident in which the teacher acted in a certain way (introduced a lesson: taught a lesson; conducted a class; handled a problem) which was good teaching.

Your account should be

- (1) accurate and detailed enough to be clearly understood.
- (2) objective and unbiased; just describe the incident.
- (3) a specific situation.

Lined area for writing the incident description.

22. Using the suggestion given under (21) describe an incident which, in your opinion, illustrates poor teaching, that occurred during the past year.



APPENDIX A (Part 2)

TYPICAL CRITICAL INCIDENT DESCRIPTIONS¹Descriptions of Good Teaching Behaviour

One class which cannot be forgotten easily, is the one English class in which the teacher took up one of the scene's in 'Macbeth.' After a short review of previous happenings she began to read the next scene which included the mixing of the witch's brew. However, the teacher did not only read the scene. She stood up as she read and thoroughly acted it. Her action with the reading of the scene made the story "live." I still can see her, as her face was distorted as the witches.

Pre-training description. (Classifications: 27--5--2)

In grade 10 at Strathcona Composite (2 years ago) I will never forget how a young teacher handled a very touching problem. After the buzz and excitement of Frosh Day I found myself surrounded by many unfamiliar faces - both teachers and fellow students.

This incident occurred in our first Social Studies class. Our teacher was young and seemed very nice but she found she had to prove this to us and it wasn't long before she was granted this rare opportunity. In our class was a boy who was considered an outcast because he was very oddly dressed and spoke little English. He had come from Italy a few years ago so next day this teacher's lecture was on Italy and before long she had Johnnie volunteering to bring Italian coins etc. to class thus making him part of our class.

Pre-training description. (Classifications: 10--2--1)

The point which stands out in my mind is concerning the handling of a problem child. I was warned at the beginning of the term as to the boys poor behavior. He began at first not too bad, but each month seem to show more resentment on his part. Feeling quite desperate, I confronted several other teachers, including the principal, with my problem. Each in turn said "Strap him! That's the only solution!" I wasn't too happy with the help I had been given, so I decided to talk the boy first to see if he couldn't be reasoned with. We stayed in one afternoon and talked for quite a while. I asked him questions such as: Why don't you like school? What things in school do you enjoy most? and many others. We discussed his problems until he realized what he had been doing wrong. He cried and said he was sorry. He has been an entirely different boy since then, not perfect, but lots better.

Post-teaching description. (Classifications: 16--3--1)

¹Note: Each of these descriptions has been reproduced with no changes: errors in spelling, punctuation, and grammatical construction have not been corrected.

During Education Week the school I was practicing teaching in had Open House one day. During that day the teacher introduced a spelling lesson in which I thought was a very good way. Even though there were parents in the room watching the pupils they were very interested in the lesson. The teacher began with telling the class an experience of her own which was related in some way to the story in the pupil's spelling books. This relating of the incident motivated the pupils very well into reading the story. After reading the story they were asked if they had had similar experiences and if so were asked to relate them. Thus they were using most of the new words from that lesson in their own stories. In this manner the teacher discovered if they knew the meanings of the words and could use them in speaking.

Post-training description. (Classifications: 27--5--2)

The lesson I have in mind is a grade I arithmetic lesson teaching the numbers from 20-30. The teacher used three aids to help the children.

To begin with she got out little plastic baskets and the children stacked them in groups of tens, 2 groups. They left ten separate ones on the desk. She also had a large abacus.

She called three children to the front, one to the baskets, one to the board, and one to the abacus. If she gave the number 22, the child at the board wrote 22, the child at the abacus picked out 22 beads, and the child at the baskets picked out 22. After they finished she had them point to the numbers, beads, or baskets and tell her the story (e.g.) two tens and two more make twenty-two. Each child was given an opportunity at the front.

Post-training description. (Classifications: 31--6--2)

Descriptions of Poor Teaching Behaviour

The teacher entered the room distributed tests and explained it. As we began working on it he continuously walked up and down the aisles in his squeaky shoes, making irrelevant comments about mostly everything and in general distracting those who were trying hard to work.

Pre-training description. (Classifications: 9--1--1)

The class (Gr.II) had been learning about subtracting 2-digit numbers (e.g. 45-32) for two or three days. The teacher put some work on the board and told them to go up one by one to do them. She called on Victor and he proceeded to subtract on the left side first. She grabbed him, gave him a good "bawling out" and shook him till his toe nails rattled. She was furious and she let her rage show in the violent shaking that boy received.

Post-training description. (Classifications: 10--2--1)

Mrs. "X" was inclined to be rather stern both in appearance and in her demand for obedience. We only had her as supervisor in the absence of our regular teacher. During this time it seemed that she had a rather "cool" attitude, an almost "superior-air" about her. She demanded prompt obedience, she lacked a warm, friendly, humorous personality which is really appreciated by students. In one case, several boys put a dead snake in her drawer, for which she kept the whole room-in-after-school. It happened that these boys were of another room and those who knew didn't tell. Our regular teacher had had a similar experience (a dead mouse) which she merely quietly disposed to the garbage can. In comparison in these cases I am inclined to say Mrs. "X" did not handle her problem correctly -; we respected our other teacher and needles to add - that prank was never tried on her again.

Pre-training description. (Classifications: 17--3--1)

Reading lesson. She didn't know the context of her subject. She was unable to answer the pupils questions. She showed a lack of interest and was continually yawning through out the lesson. Wrong answers weren't given enough attention by her. The class lost interest after a few minutes and became noisy.

Post-training description. (Classifications: 26--4--2)

The children are given exercises on the Black-board which are to be done when the child has completed reading the story assigned for his or her group. The children copy these questions and the answers into their reading scribblers. The teacher closes the lessons and the work accumulated uncorrected. Then, when children are finished the reading unit, the scribblers are handed in, marked and returned to the children with no discussion about the work or answers.

Post-teaching description. (Classifications: 28--5--2)

The teacher had quite a good idea for news reports in class but frequently the children brought new clippings which obviously must have been hurridly clipped out at the last moment considering the way it was read and the poor discrimination used in choosing news that had any real importance. The pupils brought news by rows and never a day went by when someone didn't forget his or her news. I think fewer items of news should be brought and these should be thoroughly discussed so that the pupil really understands what it means. The news should be selected only if it is significant.

Post-training descriptions. (Classifications: 26--4--2)

DETAIL OF TEACHER TRAINING COURSES¹

Note: The hours of instruction per week for both terms are shown at the top of each course description. The first figure in each term indicates lecture hours and the second laboratory hours. Courses which may be taught in either term are indicated by the words "half-year". Even numbered courses are full courses; odd numbered courses are half courses.

106. Social Studies and Community Problems (3-2; 3-2)
How the elementary and junior high schools endeavor to satisfy the psychological and social needs of children from six to fifteen years of age; the selection, organization, development and evaluation of enterprises; the social studies in the junior high school; audio-visual aids; library and reading problems in the social studies; the school and the community; and extensive reading in selected phases of the content of the elementary and junior high school programs. There will be observation, participation and teaching in Grades I-IX.
121. Reading and Language (2-0; 2-0)
A survey of the skills and abilities to be developed in reading, literature, language, spelling, handwriting, speech training and choral speech for divisions one and two; methods of development; authorized textbooks and materials available for use.
127. Mathematics 3 hrs. (half year)
The content and methodology of arithmetic; the basis of methods of teaching arithmetic; interpreting the program of studies; developing the program in the classroom; readiness in arithmetic; diagnostic and remedial teaching in arithmetic; individual differences; functional aspects of mathematical instruction; drill; problem-solving, desirable outcomes; testing the outcomes of instruction in arithmetic.
129. Science (2-0; 2-0)
Science and the integrated program; sources of materials; utilizing community resources; intra and extra classroom activities.
138. English (3-0; 3-0)
Varied activities to develop the students' oral and written language; a study of poetry, prose and drama to broaden the students' background to give them a deeper appreciation of

¹University of Alberta, Calendar:1958-59

literature and to serve as standards for their own creative writing.

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151. Art (2-0; 2-0)
This is an introductory course which aims to awaken in the student an appreciation of the possibilities of art training in his present social environment, as well as its value in elementary school education. The course will offer fundamental art experiences anticipating the obvious needs of teachers. Emphasis will be placed upon drawing, composition, color and the various media suitable for school use.
153. Music (2-0; 2-0)
A study of materials and methods used in music education in the elementary and junior high schools.
161. Educational Administration 3 hrs. (half year)
A basic course designed for students enrolled in the one-year teacher training program. Topics such as the following will receive attention: Alberta school system; Alberta School Law; records and reports; timetables; classroom management.
176. Introduction to Educational Psychology (3-0; 3-0)
An introduction to childhood and adolescence, stressing physical, mental, social, emotional, and personality development; the psychology of learning and of the special learning areas; the application of psychological principles to classroom practice.
182. Observation and Student Teaching.
Observation and student teaching for Junior E students.

APPENDIX C

TEASEL PERSONAL DATA QUESTIONNAIRE

Follow-up Questionnaire.May, 1960.

Answer the following questions as accurately as you can. They are grouped into four categories:

- | | | |
|--------|----|--|
| Part A | - | Personal Data. |
| Part B | -- | Evaluation of Your Training. |
| Part C | - | Information Concerning Your Teaching Experience. |
| Part D | - | Critical Incidents. |

PART A - PERSONAL DATA

1. Marital Status: (Check One)

1. Were you married before you started the Jr.E. course?
2. Did you marry during the Jr.E. course?
3. Have you married since the end of the course?
4. Are you engaged?
5. Will you marry before school opens in the fall of this year?
6. Single (a) unmarried;
7. (b) divorced, estranged, separated, widowed

1. ☐
2. ☐
3. ☐
4. ☐
5. ☐
6. ☐
7. ☐

2. Amount of Teaching: (Check Only One)

1. Have not taught this year (for reasons other than returning to University).
2. May and June, 1959, only, but did not teach in September (for reasons other than returning to University).
3. Started in September 1959, and am still teaching.
4. Taught May and June and started in September and am still teaching.
5. Taught May and June and started in September, but have since stopped teaching.
6. Started in September, but have since stopped teaching.
7. Taught May and June, but returned to University in the fall.
8. Did not teach in May and June, but did return to University in the fall.

1. ☐
2. ☐
3. ☐
4. ☐
5. ☐
6. ☐
7. ☐
8. ☐

3. If you checked 1, 2, 5, 6, please give reasons why you did not teach this year.

Yes No

<input type="checkbox"/>	<input type="checkbox"/>
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4. Do you plan to teach next year?
If no, please give reason.

Yes No

<input type="checkbox"/>	<input type="checkbox"/>
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<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>
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5. Did you attend Summer School last summer?
Did you take Evening Credit courses last winter?
6. Do you plan to attend Summer School this summer?

PART B - EVALUATION OF YOUR TRAINING.

7. Looking back to last year, which course do you think has helped you most in your teaching? Which has helped you the least? Please rate the twelve courses you took in order of helpfulness, rating the course that helped most 1, that which helped least 12. Please rate all twelve courses.

P.E.101: Physical Education
P.E.105: Health
Ed. 106: Enterprise
Ed. 121: Reading and Language
Ed. 127: Mathematics
Ed. 129: Science
Ed. 138: English
Ed. 151: Art
Ed. 153: Music
Ed. 161: Administration
Ed. 176: Educational Psychology
Ed. 180: Student Teaching

8. (a) If you had one criticism to make about your training last year, what would this be? (Please omit the names of instructors)

- (b) If you had one favorable comment to make about your training last year, what would this be?

- (c) If you had one suggestion to make to improve the Junior E. program, what would this be?

PART C - INFORMATION CONCERNING YOUR TEACHING EXPERIENCE.

9. Please check where your school is located
☐ rural ☐ town (small) ☐ town (large) ☐ city.
10. How many teachers, including yourself are in the school? _____
11. What grade(s) are you teaching? _____
12. How many pupils are in your class? _____
13. If you do not plan to teach next year and intend to return to University, please check (✓) Yes No
☐ ☐
14. If you plan to teach in the same school next year, please check (✓) ☐ ☐
15. If you plan to teach in some other school next year, please check (✓) ☐ ☐
- Please state your reason for this action.

16. How many times has your principal, superintendent, inspector, or supervisor been to your class to help you or give you advice with your teaching? _____

Please evaluate this help by a tick at the appropriate spot on the scale below.

Useless	Fair	Moderate	Good	Excellent

17. Have you participated in an in-service training program, teacher workshop or institute(s) during the past winter. Do not include meetings of the local A.T.A. or conventions. Yes No
☐ ☐

(a) If yes, please list topics of workshop or institute and length of workshop

	<u>Topic</u>	<u>Length</u>
1.	_____	_____ days
2.	_____	_____ days
3.	_____	_____ days
4.	_____	_____ days
5.	_____	_____ days

(b) How would you rate these workshops or institutes?

Very Effective	Effective	Moderate	In-effective	Very ineffective
----------------	-----------	----------	--------------	------------------

(c) Please give any comments on these or suggestions that would improve them.

18. State the greatest difficulty you have experienced in teaching this year.

19. If you do not intend to return to the University for winter courses next year but as soon as you possibly can, please check (✓) Yes No
☐ ☐

20. Now that you have taught for a year, how would you rate your teaching proficiency. Please indicate this by a check mark (✓) on the following scale:

Very Effective	Effective	Moderate	Ineffective	Very Ineffective
----------------	-----------	----------	-------------	------------------

1990-1991

- Your account should be

- (1) accurate and detailed enough to be clearly understood.
- (2) objective and unbiased; just describe the incident.
- (3) a specific situation.

22. Using the suggestion given under (21) describe an incident which, in your opinion, illustrates poor teaching, that occurred during the past year.

Lined area for writing the response to question 22.

UNIVERSITY OF ALBERTA
Faculty of Education

160

Division of Educational
Psychology

June 7, 1960.

Dear

Three weeks ago we sent you a questionnaire as part of Project TEASEL, the study of the Junior E. Class of 1959. Our records indicate that you have not returned your form. May I urge you to complete this form and return it to us at your first opportunity. I cannot stress too strongly how important this is to the success of the study, for without it, much of the value of the testing and all the previous forms that have been completed will be lost.

This final questionnaire is a long one and undoubtedly you are still in the process of completing it. I am certain that we can count on your fullest co-operation in forwarding it as soon as you have completed it.

Best wishes for a pleasant summer.

Yours truly,

for C. C. Anderson
D. B. Black
E. W. Buxton/Project Teasel

UNIVERSITY OF ALBERTA

Faculty of Education
Office of the Dean

Edmonton, Alberta
Canada

161

July 19, 1960.

Dear

It has been drawn to my attention that you have not returned your last questionnaire for Project TEASEL. May I urge you to do so at your earliest possible convenience, as the research project being done by Drs. Anderson, Black and Buxton should make a major contribution to the evaluation of the professional status of teaching and teacher training in the Province. Obviously for such a study to achieve this ultimate goal, it is imperative that every single person involved in this study do his/her utmost to make it a success.

It may be that you have mislaid your questionnaire. In this event, we are enclosing a second copy of this last questionnaire for your convenience.

I know that we can depend on your earliest and fullest co-operation in this important matter.

Yours sincerely,

Herbert T. Coutts

H. T. Coutts,
Dean, Faculty of Education.

DBB/jc

APPENDIX E

University of Alberta, Faculty of Education

Consultant

Dr. Burton

REPORT ON STUDENT TEACHING

Student Teacher ...

... Education

PERSONAL QUALITIES (professional interest, health, appearance, poise, attitude, manner, voice, etc.)

E	D	C	B	A
			✓	

PREPARATION FOR TEACHING (assumption of responsibility, self-diagnosis, general knowledge, knowledge of area of specialization, definiteness of aim, organization of work, suitability of lesson materials.)

E	D	C	B	A
		✓		

PRESENTATION OF LESSONS (adaptability, resourcefulness, command of English, adequacy of methods, balance between pupil and teacher activity, provision for individual differences.)

E	D	C	B	A
		✓		

CONTACT WITH PUPILS (sincerity, adjustment to grade level, sensitivity to pupil difficulty, manner of dealing with difficulties, questioning, class discussion, etc.)

E	D	C	B	A
			✓	

CLASSROOM MANAGEMENT (control of class, giving directions, making assignments, handling routine matters, keeping of records, etc.)

E	D	C	B	A
		✓		

GENERAL EVALUATION

E			D			C			B			A		
20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%

UNIVERSITY OF ALBERTA

Faculty of Education
Division of Educational
Psychology

Edmonton, Alberta,
May 31, 1960.

Dear

Professors Anderson, Buxton and myself have been conducting a research project (Project TEASEL) involving the Edmonton Junior E. Class graduating in the spring of 1959 and who are now completing their first year of teaching. During the period March 14 to May 25, we were able to visit 181 of these teachers in their classrooms.

Of the remaining teachers, which we estimate at around 100, we would like to get some rating of their teaching competency in order that we may have as large a sample as possible for our analysis. We are asking you to help us in this regard.

Attached you will find a confidential rating form for the students in your schools or for those schools for which perhaps you serve as Inspector. Would you complete this form for each student and return them to us, at your earliest convenience, C/O Project TEASEL, Faculty of Education, University of Alberta, Edmonton. You will note that several blank Jr. E. rating forms are included in the event that you have other Jr. E. teachers on your staff who graduated from the Edmonton campus a year ago (1959). We are doing this because we still have forty of these students for whom we can find no record. Would you complete the form for these people including their name, and their maiden surname if married, in order that we may assign the proper code number to these cases. It should be noted that our analysis will in no way ever identify students by name or the school district in which they are teaching.

One other point about the rating forms, you will note that we have used a five point rating scale, the lowest of which reads "Not suited for teaching and should not be teaching". Through an oversight, this rating should read:

Experiencing considerable difficulty and would benefit
from further training or not suited for teaching and
should not be teaching

Our reasoning was that there would be only a small number of teachers falling in these two categories and so they could be combined. However, as noted above, the one description was omitted from the form when it was prepared.

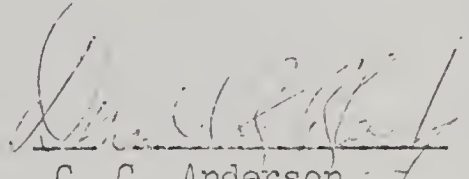
Returning to the project itself, upon receipt of your ratings

the long, arduous task of analysis of the data we have collected from the Junior E. program can begin. We fully anticipate that it will take a full year to complete this work.

In closing, may I express our sincere appreciation for your help with the rating forms.

Yours truly,

for:


C. C. Anderson
E. W. Burton
D. B. Black

Name: _____

This part may be torn off

CONFIDENTIAL

165

1. Was this teacher on a bursary from your Division, County or District?
No ☐ 1 year ☐ 2 years ☐
2. Has this bursary or any part of it been refunded? Yes ☐ No ☐
3. How effective is (or was, as the case may be!) this teacher? (Subjective evaluation of the superintendent, supervisor or principal)
Check One
Exceptional, demonstrates professional skill at a high level... ☐
Very proficient, knows what to do and how to do it ☐
Doing a satisfactory job - average ☐
Experiencing some difficulty - inadequate preparation ☐
Not suited for teaching and should not be teaching ☐

Name: _____

This part may be torn off

CONFIDENTIAL

1. Was this teacher on a bursary from your Division, County or District?
No ☐ 1 year ☐ 2 years ☐
2. Has this bursary or any part of it been refunded? Yes ☐ No ☐
3. How effective is (or was, as the case may be!) this teacher (Subjective evaluation of the superintendent, supervisor or principal)
Check One
Exceptional, demonstrates professional skill at a high level.... ☐
Very proficient, knows what to do and how to do it ☐
Doing a satisfactory job - average ☐
Experiencing some difficulty - inadequate preparation ☐
Not suited for teaching and should not be teaching ☐

Name: _____

This part may be torn off

CONFIDENTIAL

1. Was this teacher on a bursary from your Division, County or District?
No ☐ 1 year ☐ 2 years ☐
2. Has this bursary or any part of it been refunded: Yes ☐ No ☐
3. How effective is (or was, as the case may be!) this teacher (Subjective evaluation of the superintendent, supervisor or principal)
Check One
Exceptional, demonstrates professional skill at a high level.... ☐
Very proficient, knows what to do and how to do it ☐
Doing a satisfactory job - average ☐
Experiencing some difficulty - inadequate preparation ☐
Not suited for teaching and should not be teaching ☐

Each EXJE is to be rated on the following: a priori dimensions of teacher efficiency. Note that the category 'indeterminate' means that the existence or non-existence of the trait cannot be observed in the context of the lesson given by the teacher.

1. Pupils get down to work promptly at the beginning of a lesson

☐

Yes

☐

Middling

☐

No

2. Extent of delegation of responsibility

☐

Considerable

☐

Middling

☐

Little or None

☐

Indeterminate

3. Organization and planning of classroom activity and lessons

☐

Well Organized

☐

Middling

☐

Disorganized

4. Variety of teaching methods used

☐

Several

☐

Only One

5. Use of constructive and effective motivational devices, (positive or neg.)

☐

Extensive

☐

Middling

☐

None

6. Teacher's knowledge of content of lesson

☐

Very Competent

☐

Competent Enough

☐

Shaky

The first part of the paper discusses the importance of the research and the objectives of the study. It also provides a brief overview of the methodology used in the study.

The second part of the paper presents the results of the study. It includes a table showing the data collected during the study.

Table 1: Data collected during the study	Table 2: Data collected during the study	Table 3: Data collected during the study
Table 4: Data collected during the study	Table 5: Data collected during the study	Table 6: Data collected during the study

The third part of the paper discusses the implications of the study and the conclusions drawn from the results. It also provides a brief overview of the limitations of the study.

Table 7: Data collected during the study	Table 8: Data collected during the study	Table 9: Data collected during the study
Table 10: Data collected during the study	Table 11: Data collected during the study	Table 12: Data collected during the study

The fourth part of the paper discusses the future research and the potential applications of the study. It also provides a brief overview of the conclusions drawn from the results.

Table 13: Data collected during the study	Table 14: Data collected during the study	Table 15: Data collected during the study
Table 16: Data collected during the study	Table 17: Data collected during the study	Table 18: Data collected during the study

The fifth part of the paper discusses the conclusions drawn from the study and the implications for future research. It also provides a brief overview of the limitations of the study.

7. Provision for individual differences (group work)

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☐☐☐☐

At Least Adequate

Middling

No Provision

Indeterminate

8. Cooperative activity by class

☐☐☐☐

Evident

Middling

Not Evident

Indeterminate

9. Class feeling toward the teacher

☐☐☐

Enthusiasm

Middling

No Enthusiasm

10. Teacher's rapport with the class

☐☐☐☐

Considerable

Adequate

Poorish

Non-existent

11. Manners, deportment of children

☐☐☐Courteous,
Respectful

Middling

Discourteous,
Disrespectful

12. Teacher's behavior in conduct of class

☐☐☐

Relaxed, at ease

Middling

Nervous, taut

13. General extent to which teacher gets ideas across

☐☐☐☐☐

Very Good

Good

Middling

Poor

Very Poor

Section 1: Introduction to the Project

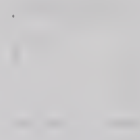


Figure 1.1: Project Structure Overview

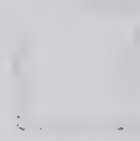


Figure 1.2: Project Structure Overview

Figure 1.3: Project Structure Overview

Figure 1.4: Project Structure Overview

Section 2: Project Goals and Objectives

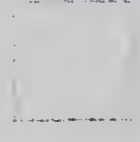


Figure 2.1: Project Structure Overview

Figure 2.2: Project Structure Overview

Figure 2.3: Project Structure Overview

Section 3: Project Methodology

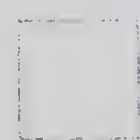


Figure 3.1: Project Structure Overview

Figure 3.2: Project Structure Overview

Figure 3.3: Project Structure Overview

Figure 3.4: Project Structure Overview

Section 4: Project Results and Discussion



Figure 4.1: Project Structure Overview

Figure 4.2: Project Structure Overview

Figure 4.3: Project Structure Overview

Section 5: Project Conclusion and Future Work

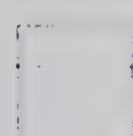
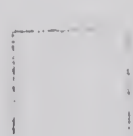


Figure 5.1: Project Structure Overview

Figure 5.2: Project Structure Overview

Figure 5.3: Project Structure Overview

Section 6: Project Appendix and References



APPENDIX H

SHUTTE SCALE FOR RATING TEACHERS

SCHUTTE SCALE FOR RATING TEACHERS

By T. H. SCHUTTE, M.A.

Director Training Department, Northern Arizona Normal School, Flagstaff, Arizona

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This scale is a device to guide and assist one in the rating of teachers in those qualities which make for success in teaching. The scale will be found valuable in aiding the teacher to analyze herself with a view to improvement and in aiding the rating officer in his analysis of the teacher and to arrive at an adequate rating and suggest means of improvement. Ratings are made under the following headings: I. Personal and Social Qualities; II. Coöperative Qualities; III. Leadership; IV. Scientific and Professional Attitude; V. Teaching Ability. Each of these general traits is analyzed by means of from 11 to 27 specific questions, each calling for a rating in a

single aspect of the general trait. The rating in the general trait is the average of the specific ratings. A combined rating may be found which is the average of the ratings in the five general traits. The scale was constructed largely from the questions asked by school executives concerning candidates and from questions they asked candidates in conference. A defect of this scale, as of others, is that it emphasizes teacher activities when, ideally, pupil activities should be emphasized most. The directions for the use of the scale are given on page 4.

Name of teacher rated	Summary of ratings		
	Trait	Profile	Avg. Score
Home address	Pers. & Soc.	1.....2.....3.....4.....5
	Coöperation	1.....2.....3.....4.....5
	Leadership	1.....2.....3.....4.....5
	Sci. & Prof.	1.....2.....3.....4.....5
	Teaching	1.....2.....3.....4.....5
School status..... (State briefly the amount of school work done)	Combined	1.....2.....3.....4.....5	Avg.

Training	Curriculum		Name and location of institution	Date
	Preparatory		
	Normal School		
	College		

Experience (Give a brief account of positions held)	Type	Place	Date	Salary

Rating based on	School.....	City and state.....
Work done in	Grade.....	Subject.....
		Date.....

Can she teach drawing?.....	music?.....	sewing?.....	cooking?.....	construction work?.....	manual training?.....
Other specialties?.....	Can she sing?.....	play the piano?.....	play the organ?.....		
Other instruments?.....	Age.....	yrs.,.....	mos.	Height.....	ft.,.....
				in.	Weight.....
Condition of health.....				Church affiliation.....	

Remarks

Rating made by

Name..... Title..... Date of rating..... 19.....

TRAIT	Far Below Average	Below Average	Average	Above Average	Far Above Average	Score	Comment
	Lowest 5 %	Next 25 %	Middle 40 %	Next 25 %	Highest 5 %		
	E	D	C	B	A		
	1	2	3	4	5		
I. PERSONAL AND SOCIAL QUALITIES:							
1. Is she personally likable — does she attract people?.....							
2. Is she free from distracting peculiarities?.....							
3. Does she meet people easily?.....							
4. Is she careful in dress and social niceties?.....							
5. Is she tactful in dealing with pupils and patrons?.....							
6. Does she possess a desirable sense of humor?.....							
7. Does she possess self-control?.....							
8. Is she desirably "unconceited"?.....							
9. Has she good general social sense?.....							
10. Does she have common sense?.....							
11. Degree of intellectual capacity?.....							
12. Is she industrious?.....							
13. Is she persevering?.....							
14. Has she good health?.....							
15. Is her voice desirable for teaching?.....							
16. Is she self-reliant?.....							
17. Is she free from selfishness?.....							
18. Is she free from diffidence?.....							
<i>Total I Scores</i>							<i>Avg. I Score</i>
II. COÖPERATIVE QUALITIES:							
1. Does she have enthusiasm?.....							
2. Is she sane and alive in teachers' meetings?.....							
3. Does she play fair with her associates?.....							
(a) With those in subordinate positions?.....							
(b) With those in positions of equal level?.....							
(c) With her superiors?.....							
4. Does she have a good sense of loyalty?.....							
(a) To the school?.....							
(b) To co-workers?.....							
(c) To superiors?.....							
(d) To pupils?.....							
5. Does she have a spirit of coöperation and team work?.....							
6. Does she refrain from attention to tales and gossip?.....							
7. Is she free from fault finding?.....							
8. Does she sacrifice her time and energy for the sake of the school?....							
9. Does she shoulder responsibility for her own acts?.....							
10. Does she subject herself to constructive criticism?.....							
11. Is she sensible in her attitude toward the opinion of others?.....							
<i>Total II Scores</i>							<i>Avg. II Score</i>
III. LEADERSHIP:							
1. Does she have a proper ideal of life (tastes and appreciation)?.....							
2. Does she possess a good sense of justice?.....							
3. Has she a desirable degree of confidence in her own ability?.....							
4. Does she exercise a wholesome general influence?.....							
5. Does she have a commendable degree of aggressiveness?.....							
6. Has she organizing and planning ability?.....							
7. Is she interested in the welfare of the group?.....							
(a) The pupils?.....							
(b) The faculty?.....							
8. Is she willing to enter into group activities?.....							
9. Does she seek to acquaint herself with the pupils and their conditions?							
10. Does she go out of her way to advise pupils?.....							
11. Do pupils go to her for advice and conference?.....							
<i>Total III Scores</i>							<i>Avg. III Score</i>

TRAIT	Far Below Average	Below Average	Average	Above Average	Far Above Average	Score	Comment
	Lowest 5 %	Next 25 %	Middle 50 %	Next 25 %	Highest 5 %		
	E	D	C	B	A		
	1	2	3	4	5		

V. SCIENTIFIC AND PROFESSIONAL ATTITUDE:

1. Does she show interest in professional reading?.....							
2. Does she have proper respect for the teaching profession?.....							
3. Does she have a scientific attitude — ability to suspend judgment until sufficient data are secured?.....							
4. Does she have a respectful attitude toward the conclusions of others?							
5. Is she sanely optimistic?.....							
6. Is she open-minded?.....							
7. Is she inventive in procedure, method, and device?.....							
8. Has she good business sense?.....							
(a) Promptness in starting work?.....							
(b) Regularity in performance of duty?.....							
(c) Attention to routine duties?.....							
(d) Promptness with reports, etc.?.....							
(e) Use good form in reports, etc.?.....							
9. Does she give attention to details of light, heat, and ventilation?....							
0. Does she have a sense of responsibility?.....							
1. Does she adapt herself to meet situations?.....							
2. Is she interested in school functions — athletics, lyceum, socials, etc.?							
3. Does she have proper sense of value of time and material?.....							
4. Does she plan adequately for growth?.....							
5. Does her class work proceed smoothly?.....							
6. Does she understand children?.....							
7. Does she possess a desirable type of dignity?.....							
8. Does she have pride in the performance of duty?.....							
9. Is she generally reliable?.....							
Total IV Scores						Avg. IV Score	

TEACHING ABILITY:

1. Does she use good English?.....							
2. Does she think well before the class?.....							
3. Does she express herself clearly?.....							
4. Does she have effective yet democratic control?.....							
5. Is she skillful in making assignments?.....							
6. Is she skillful in teaching pupils to study?.....							
7. Does she select subject matter effectively?.....							
8. Does she relate lessons to materials in other fields?.....							
9. Does she relate lessons to preceding work?.....							
0. Can she draw her knowledge out of other subjects so as to broaden and make effective use of the subject she teaches?.....							
1. Does she keep the discussion within the pupils' comprehension?.....							
2. Is she skillful in questioning?.....							
3. Does she arouse thought?.....							
4. Does she secure class participation and coöperation?.....							
5. Does she have clear aims?.....							
6. Does she plan well to reach her teaching aims?.....							
7. Does she make clear to pupils the purpose and value of the work?...							
8. Is she skillful in motivating work?.....							
9. Does she arouse in pupils a desire to work?.....							
0. Does she make effective use of illustrative material?.....							
1. Is she quick to take advantage of pupils' questions?.....							
2. Is she skillful in drill work?.....							
3. Is she skillful in discovering pupils' difficulties?.....							
4. Does she attend to individual differences?.....							
5. Is she sympathetic with young people's views?.....							
6. Is she constructive in criticism?.....							
7. Can she handle a large class?.....							
Total V Scores						Avg. V Score	

It is not intended that all teachers be marked in all qualities on this scale, but all teachers should be marked under each of the five large divisions (Personal and Social Qualities; Coöperative Qualities; Leadership; Scientific and Professional Attitude; and Teaching Ability). The subdivisions

are given to aid the rating officer in his analysis. He should check as many of the subdivisions as he can, but only those for which he has an adequate basis for judgment.

SAMPLE RATING

TRAIT	Far Below Average	Below Average	Average	Above Average	Far Above Average	Score	Comment
	Lowest 5 %	Next 25 %	Middle 40 %	Next 25 %	Highest 5 %		
	E	D	C	B	A		
	1	2	3	4	5		
I. PERSONAL AND SOCIAL QUALITIES :							
1. Is she personally likable — does she attract people?.....			✓			3	Good-looking
2. Is she free from distracting peculiarities?.....				✓		4	
3. Does she meet people easily?.....		✓				2	Lacks grace
4. Is she careful in dress and social niceties?.....			✓			3	
5. Is she tactful in dealing with pupils and patrons?.....			✓			3	
Total I Scores		1	3	1		15	Avg. I Score 3

Provision is made for giving each subdivision of the five general traits any one of five ratings, A, B, C, D, or E, or numerical ratings, 5, 4, 3, 2, or 1. As shown in the columns for rating, a rating of A or 5 indicates that the teacher ranks among the highest 5 per cent in that trait or aspect of the trait and is therefore "far above average." A rating of B or 4 indicates that the teacher ranks among the next 25 per cent in that trait or aspect of the trait, this being "above average." A rating of C or 3 indicates average quality in the trait or ranking somewhere within the middle 40 per cent, etc.

The steps necessary in making a rating are as follows:

1. Rate the teacher in each subdivision by placing a check mark in one of the columns headed A, B, C, D, or E, as shown in the sample above. These spaces are made wide enough so that the checks may be placed in either the middle or the right or left side of the space in order to indicate finer distinctions of rating than merely the five steps. For example, in the sample rating above the teacher is rated as just average in the first trait, whereas in trait 4 she is rated as being in the middle 40 per cent, but the check is placed at the left side of the space, indicating a rating near the lower extreme of the middle 40 per cent. Similarly this teacher is rated as near the upper limit of the middle 40 per cent in trait 5.

2. In the line opposite "Total I Scores," place in each column the number of ratings in that column given to subdivisions of Trait I, Personal and Social Qualities, and do the same for the other four general traits.

3. After rating the teacher in this way in as many subdivisions as possible, write opposite each subdivision, in the column headed "Score," the numerical value of the rating under which the check has been placed, as shown in the sample rating.

4. Add the scores given to the various subdivisions under Trait I, Personal and Social Qualities, divide this by the number of subdivisions rated under that general trait, and write the quotient in the space after "Average I Score," as shown in the sample rating above. In a similar manner find the average score for each of the other four general traits.

5. Provision is made on the first page of the rating scale for making a profile showing graphically the average rating given in each of the five gen-

eral traits. If very great accuracy is not necessary, steps 3 and 4 may be omitted and an average rating in each of the five general traits estimated from the distribution of traits found in step 2. In that case draw a circle around the figure in the profile indicating the rating in each of the five general traits and join these by lines. The profile shows vividly in what traits the teacher is strong and in what traits weak.

If greater accuracy is desired, a point may be placed on each of the five profile scales denoting the exact value of the average scores in the general traits found numerically and the profile made by joining these points. Thus a rating of 3.5 in Trait I would be represented by a point on the first profile scale halfway between 3 and 4. Inasmuch as average ratings will seldom exceed 4 and seldom fall below 2, it is probably worth while to make these finer distinctions.

6. Write in the column headed "Average Score" on the first page the average score in each of the five general traits, and at the foot of this column enter the average of these five average scores. This constitutes the combined score or rating of the teacher in all the traits rated.

If for any reason it seems desirable to convert the rating of a teacher into terms of a percentage, this may be done simply by dividing the combined average score by 5, the maximum possible combined average score. Thus a combined average rating of 4 would become a percentage rating of 80 per cent. Percentages thus found would range from a possible 20 to a possible 100, with a median value of 60.

Uses to be made of the scale. The scale may be used in the following ways:

1. To single out qualities for improvement;
2. To analyze a teacher for employment and promotion;
3. As an aid in the supervision of teachers by providing a concrete basis for conference;
4. For use by classes in education to point the way to analysis;
5. As a guide in observing others for self-improvement;
6. As a guide and basis for discussion in teachers' meetings to produce consciousness of details and teaching merit.

APPENDIX I

BREAKDOWN OF THE GENERALIZED TEACHING
BEHAVIOURS INTO SIX CATEGORIES

I. GOOD TEACHING BEHAVIOUR

- Category I. Teaching behaviour which reflected positive and negative aspects of the teacher's personality.
- no signs of favouritism
 - no unjust criticism
 - fair and reliable evaluation
 - shows a good sense of humor
 - willingness to admit to making mistakes
 - willingness to admit to not knowing every answer
 - has good voice modulation and uses voice well
 - shows enthusiasm for the subject under study
 - self-controlled at all times
- Category II. Teaching behaviour which reflected the teacher's attention to individual differences and problems of students.
- shows consideration for students' feelings
 - help for students having academic problems
 - concern for the personal problems of students
 - willingness to help students make adjustments to problems
- Category III. Teaching behaviour which reflected the teacher's ability to handle discipline problems.
- kept good class control
 - refrained from using nagging as a disciplinary device
 - control over individual discipline problems
 - shows poise and assurance whatever the discipline problem
- Category IV. Teaching behaviour which reflected the teacher's preparation and knowledge of subject matter.
- makes the aims of the lessons clear to the students
 - plans lessons so as to develop student initiative and reasoning
 - exhibits sound knowledge of subject matter
 - lessons show evidence of planning and preparation
 - gives clear and concise explanations

- Category V. Teaching behaviour which reflected the teacher's proficiency with teaching methods.
- welcomes questions from students
 - entertains the opinions of students in class
 - allows for maximum student participation in lessons
 - shows flexibility - able to take advantage of the moment
 - uses personal experiences to advantage
 - lessons are introduced well
 - lesson assignments are carefully explained
 - makes use of reference materials and outside sources
 - uses sound methods for drill and review
 - relates subject matter to students' previous knowledge
 - uses varied examples to clarify explanations

- Category VI. Teaching behaviour which specifically reflected the teacher's use of visual aids.
- uses visual aids to advantage.

II. POOR TEACHING BEHAVIOUR

- Category I. Teaching behaviour which reflected positive and negative aspects of the teacher's personality.
- shows signs of favouritism
 - criticizes unjustly
 - unfair and unreliable evaluation of students' work
 - lacks a sense of humor
 - unwilling to admit to making mistakes
 - unwilling to admit to not knowing every answer
 - poor voice modulation and uses voice poorly
 - shows little enthusiasm for the subject under study
 - shows a serious lack of self-control

- Category II. Teaching behaviour which reflected the teacher's attention to individual differences and problems of students.
- lacks consideration for students' feelings
 - offers no help to those having academic problems
 - shows no concern for the personal problems of students
 - unwilling to offer students help in making adjustments to problems

- Category III. Teaching behaviour which reflected the teacher's ability to handle discipline problems.
- unable to keep class control
 - resorts to nagging as a disciplinary device
 - has little control over individual discipline problems
 - lacks poise and assurance when discipline problems arise
- Category IV. Teaching behaviour which reflected the teacher's preparation and knowledge of subject matter.
- does not clarify the aims of the lessons for students
 - lessons fail to offer opportunity for students to develop reasoning and initiative
 - exhibits lack of knowledge of subject matter
 - lessons show little evidence of planning and preparation
 - explanations lack clarity
- Category V. Teaching behaviour which reflected the teacher's proficiency with teaching methods.
- does not welcome questions from students
 - does not allow students to express their own opinions
 - allows only minimal student participation in lessons
 - inflexible - allows no deviation from the lesson plan
 - unable to take advantage of personal experiences to make lessons more interesting
 - lessons are poorly introduced
 - lesson assignments lack clarity
 - little reference to outside sources
 - dull and boring drill and review methods
 - subject matter is not related to students' previous knowledge
 - lack of varied examples to clarify explanations
- Category VI. Teaching behaviour which specifically reflected the teacher's use of visual aids.
- little or no use of visual aids.

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